```
=> d que l133
L2         26268 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "SOL-GEL PROCESSING"+PFT,N
                T/CT
L3          7088 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COLORIMETRY+PFT,NT/CT
L4        106911 SEA FILE=HCAPLUS ABB=ON  PLU=ON  METAL(3A)SURFACE#
L5           375 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L4 AND (L2 OR SOL(A)GEL?)

L6           210 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L5 AND COAT?
L7             7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L6 AND (L3 OR COLOR? OR
                COLOUR?)
L11             QUE  ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                BOXES OR JAR#
L12            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L6 AND L11
L13         5140 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR
                ONE)(3A)SPECIMEN#
L14        38555 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (SECOND OR 2ND OR 2 ND OR
                TWO)(3A)(SPECIMEN# OR SAMPLE#)
L15        40306 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR
                ONE)(3A)(SPECIMEN# OR SAMPLE#)
L16            0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L5 AND L14 AND L15
L17            8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L2 AND L14 AND L15
L18             QUE  ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR SU
                BSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR P
                ANE? OR DISK? OR DISC# OR WAFER?
L19            6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L17 AND L18
L20            8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L17 OR L19
L21           11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L2 AND L3
L22          375 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L5 AND L18
L23            0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L22 AND L13 AND L14
L24           32 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L22 AND (SPECIMEN# OR
                SAMPLE#)
L25           15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND COAT?
L26            0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L11
L27         5466 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14 AND L15
L28          116 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27 AND L11
L29            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND (L2 OR SOL(A)GEL?)

L30            9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND (L3 OR COLOR? OR
                COLOUR?)
L31             QUE  ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                BOXES OR JAR# OR CARTRIDG?
L32          129 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27 AND L31
L33            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND (L2 OR SOL(A)GEL?)

L34            9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND (L3 OR COLOR? OR
                COLOUR?)
L35           50 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L7 OR L12 OR L16 OR L17
                OR L19 OR L20 OR L21 OR L23 OR L25 OR L26 OR L29 OR L30 OR
                L33 OR L34
L36           13 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND ALLOY?/SC,SX
L37           22 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 OR L34 OR L36
L38            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 AND TEST#
L39           22 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR L38
L40           25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND METAL?
L41           35 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39 OR L40
L42           21 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 AND (1840-2004)/PRY,AY
                ,PY
L75         2529 SEA FILE=JAPIO ABB=ON  PLU=ON  SOL(A)GEL?
L95         5153 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L75 AND (SPECIMEN# OR
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                     SAMPLE#)
L110          172 SEA FILE=PASCAL ABB=ON  PLU=ON  L95 AND (COLOR? OR
                     COLOUR?)
L121           40 SEA FILE=WPIX ABB=ON  PLU=ON  L110 AND (METHOD? OR
                     PROCESS?)
L122            1 SEA FILE=WPIX ABB=ON  PLU=ON  L121 AND COAT?(5A)TEST?
L123           22 SEA FILE=WPIX ABB=ON  PLU=ON  L121 AND COAT?
L124            3 SEA FILE=WPIX ABB=ON  PLU=ON  L123 AND (TIME OR TIMING)
L125            6 SEA FILE=WPIX ABB=ON  PLU=ON  L123 AND (COLOR? OR COLOUR?)(
                     3A)CHANG?
L126            8 SEA FILE=WPIX ABB=ON  PLU=ON  L122 OR L124 OR L125
L127            5 SEA FILE=WPIX ABB=ON  PLU=ON  L126 AND METAL?
L128            1 SEA FILE=WPIX ABB=ON  PLU=ON  L127 AND L31
L129            5 SEA FILE=WPIX ABB=ON  PLU=ON  L127 OR L128
L132            7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L129 AND (PY<2005 OR
                     PRY<2005 OR AY<2005)
L133           28 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L132 OR L42


=> d que l131
L4         106911 SEA FILE=HCAPLUS ABB=ON  PLU=ON  METAL(3A)SURFACE#
L14         38555 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (SECOND OR 2ND OR 2 ND OR
                     TWO)(3A)(SPECIMEN# OR SAMPLE#)
L15         40306 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR
                     ONE)(3A)(SPECIMEN# OR SAMPLE#)
L31               QUE  ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                     BOXES OR JAR# OR CARTRIDG?
L44          6554 SEA FILE=WPIX ABB=ON  PLU=ON  SOL(A)GEL?
L45             7 SEA FILE=WPIX ABB=ON  PLU=ON  L44 AND L14 AND L15
L46             1 SEA FILE=WPIX ABB=ON  PLU=ON  US20050158862/PN
L47             0 SEA FILE=WPIX ABB=ON  PLU=ON  L45 AND L46
L48           195 SEA FILE=WPIX ABB=ON  PLU=ON  L44 AND L4
L49           123 SEA FILE=WPIX ABB=ON  PLU=ON  L48 AND COAT?
L50            17 SEA FILE=WPIX ABB=ON  PLU=ON  L49 AND (COLOR? OR COLOUR?)
L51             0 SEA FILE=WPIX ABB=ON  PLU=ON  L50 AND L31
L52            25 SEA FILE=WPIX ABB=ON  PLU=ON  (L45 OR L46 OR L47) OR (L50
                     OR L51)
L53            18 SEA FILE=WPIX ABB=ON  PLU=ON  L52 AND (PY<2005 OR PRY<2005
                     OR AY<2005)
L75          2529 SEA FILE=JAPIO ABB=ON  PLU=ON  SOL(A)GEL?
L95          5153 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L75 AND (SPECIMEN# OR
                     SAMPLE#)
L110          172 SEA FILE=PASCAL ABB=ON  PLU=ON  L95 AND (COLOR? OR
                     COLOUR?)
L121           40 SEA FILE=WPIX ABB=ON  PLU=ON  L110 AND (METHOD? OR
                     PROCESS?)
L122            1 SEA FILE=WPIX ABB=ON  PLU=ON  L121 AND COAT?(5A)TEST?
L123           22 SEA FILE=WPIX ABB=ON  PLU=ON  L121 AND COAT?
L124            3 SEA FILE=WPIX ABB=ON  PLU=ON  L123 AND (TIME OR TIMING)
L125            6 SEA FILE=WPIX ABB=ON  PLU=ON  L123 AND (COLOR? OR COLOUR?)(
                     3A)CHANG?
L126            8 SEA FILE=WPIX ABB=ON  PLU=ON  L122 OR L124 OR L125
L127            5 SEA FILE=WPIX ABB=ON  PLU=ON  L126 AND METAL?
L128            1 SEA FILE=WPIX ABB=ON  PLU=ON  L127 AND L31
L129            5 SEA FILE=WPIX ABB=ON  PLU=ON  L127 OR L128
L130            4 SEA FILE=WPIX ABB=ON  PLU=ON  L129 AND (PY<2005 OR
                     PRY<2005 OR AY<2005)
L131           21 SEA FILE=WPIX ABB=ON  PLU=ON  L130 OR L53
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=> d que l120
L4        106911 SEA FILE=HCAPLUS ABB=ON  PLU=ON  METAL(3A)SURFACE#
L14        38555 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (SECOND OR 2ND OR 2 ND OR
                 TWO)(3A)(SPECIMEN# OR SAMPLE#)
L15        40306 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR
                 ONE)(3A)(SPECIMEN# OR SAMPLE#)
L18              QUE  ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR SU
                 BSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR P
                 ANE? OR DISK? OR DISC# OR WAFER?
L31              QUE  ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                 BOXES OR JAR# OR CARTRIDG?
L55        23791 SEA FILE=PASCAL ABB=ON  PLU=ON  SOL(A)GEL?
L56            6 SEA FILE=PASCAL ABB=ON  PLU=ON  L55 AND L14 AND L15
L57            0 SEA FILE=PASCAL ABB=ON  PLU=ON  L56 AND  (COLOR? OR
                 COLOUR?)
L58           71 SEA FILE=PASCAL ABB=ON  PLU=ON  L55 AND L31
L59            0 SEA FILE=PASCAL ABB=ON  PLU=ON  L58 AND L4
L60           30 SEA FILE=PASCAL ABB=ON  PLU=ON  L58 AND COAT?
L61            3 SEA FILE=PASCAL ABB=ON  PLU=ON  L60 AND (SPECIMEN# OR
                 SAMPLE#)
L62            3 SEA FILE=PASCAL ABB=ON  PLU=ON  L61 AND L18
L63            1 SEA FILE=PASCAL ABB=ON  PLU=ON  L62 AND METAL?
L64            3 SEA FILE=PASCAL ABB=ON  PLU=ON  L57 OR L59 OR (L61 OR L62
                 OR L63)
L75         2529 SEA FILE=JAPIO ABB=ON  PLU=ON  SOL(A)GEL?
L95         5153 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L75 AND (SPECIMEN# OR
                 SAMPLE#)
L110         172 SEA FILE=PASCAL ABB=ON  PLU=ON  L95 AND (COLOR? OR
                 COLOUR?)
L111         160 SEA FILE=PASCAL ABB=ON  PLU=ON  L110 AND (METHOD? OR
                 PROCESS?)
L112          47 SEA FILE=PASCAL ABB=ON  PLU=ON  L111 AND COAT?
L113          14 SEA FILE=PASCAL ABB=ON  PLU=ON  L112 AND TEST?
L114           4 SEA FILE=PASCAL ABB=ON  PLU=ON  L111 AND COAT?(5A)TEST?
L115           5 SEA FILE=PASCAL ABB=ON  PLU=ON  L113 AND (TIME OR TIMING)
L116           0 SEA FILE=PASCAL ABB=ON  PLU=ON  L115 AND CHANGE(3A)(COLOR?
                 OR COLOUR?)
L117           0 SEA FILE=PASCAL ABB=ON  PLU=ON  L115 AND CHANG?(3A)(COLOR?
                 OR COLOUR?)
L118           7 SEA FILE=PASCAL ABB=ON  PLU=ON  (L114 OR L115 OR L116 OR
                 L117)
L119           7 SEA FILE=PASCAL ABB=ON  PLU=ON  L118 AND (PY<2005 OR
                 PRY<2005 OR AY<2005)
L120          10 SEA FILE=PASCAL ABB=ON  PLU=ON  L64 OR L119


=> d que l109
L4        106911 SEA FILE=HCAPLUS ABB=ON  PLU=ON  METAL(3A)SURFACE#
L14        38555 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (SECOND OR 2ND OR 2 ND OR
                 TWO)(3A)(SPECIMEN# OR SAMPLE#)
L15        40306 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR
                 ONE)(3A)(SPECIMEN# OR SAMPLE#)
L18              QUE  ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR SU
                 BSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR P
                 ANE? OR DISK? OR DISC# OR WAFER?
L31              QUE  ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                 BOXES OR JAR# OR CARTRIDG?
L65        28871 SEA FILE=COMPENDEX ABB=ON  PLU=ON  SOL(A)GEL?
L66          114 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L65 AND L4
L67            0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L66 AND L14 AND L15
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L68            19 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L66 AND (SPECIMEN# OR
                  SAMPLE#)
L69             0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L68 AND  (COLOR? OR
                  COLOUR?)
L70             9 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L68 AND COAT?
L71             9 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L67 OR L69 OR L70
L72             0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L71 AND L31
L73             9 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L71 OR L72
L74             2 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L73 AND (PY<2005 OR
                  PRY<2005 OR AY<2005)
L75          2529 SEA FILE=JAPIO ABB=ON  PLU=ON  SOL(A)GEL?
L95          5153 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L75 AND (SPECIMEN# OR
                  SAMPLE#)
L96           122 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L95 AND (COLOR? OR
                  COLOUR?)
L97             9 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L96 AND TEST?
L98             6 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L97 AND L18
L99             1 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L96 AND L31
L100            0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L96 AND L4
L101           40 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L96 AND COAT?
L102           29 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L101 AND (METHOD? OR
                  PROCESS?)
L103           32 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L98 OR L99 OR L100 OR
                  L102
L104            7 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L103 AND TEST?
L105            8 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L103 AND (TIME OR
                  TIMING)
L106           12 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L104 OR L105
L107           12 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L106 AND (COLOR? OR
                  COLOUR?)
L108           10 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L107 AND  (PY<2005 OR
                  PRY<2005 OR AY<2005)
L109           12 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L108 OR L74


=> d que l94
L4         106911 SEA FILE=HCAPLUS ABB=ON  PLU=ON  METAL(3A)SURFACE#
L14         38555 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (SECOND OR 2ND OR 2 ND OR
                  TWO)(3A)(SPECIMEN# OR SAMPLE#)
L15         40306 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR
                  ONE)(3A)(SPECIMEN# OR SAMPLE#)
L18               QUE  ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR SU
                  BSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR P
                  ANE? OR DISK? OR DISC# OR WAFER?
L31               QUE  ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                  BOXES OR JAR# OR CARTRIDG?
L44          6554 SEA FILE=WPIX ABB=ON  PLU=ON  SOL(A)GEL?
L48           195 SEA FILE=WPIX ABB=ON  PLU=ON  L44 AND L4
L49           123 SEA FILE=WPIX ABB=ON  PLU=ON  L48 AND COAT?
L50            17 SEA FILE=WPIX ABB=ON  PLU=ON  L49 AND (COLOR? OR COLOUR?)
L75          2529 SEA FILE=JAPIO ABB=ON  PLU=ON  SOL(A)GEL?
L76            50 SEA FILE=JAPIO ABB=ON  PLU=ON  L75 AND L4
L77             0 SEA FILE=JAPIO ABB=ON  PLU=ON  L76 AND (L14 OR L15 OR
                  SPECIMEN# OR SAMPLE#)
L78             2 SEA FILE=JAPIO ABB=ON  PLU=ON  L76 AND (COLOR? OR COLOUR?)

L79             0 SEA FILE=JAPIO ABB=ON  PLU=ON  L77 AND L18
L81             0 SEA FILE=JAPIO ABB=ON  PLU=ON  L50 AND L31
L82            14 SEA FILE=JAPIO ABB=ON  PLU=ON  L76 AND PROCESS?
L83            16 SEA FILE=JAPIO ABB=ON  PLU=ON  L77 OR L78 OR L79 OR L81 OR
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              L82
L84          13 SEA FILE=JAPIO ABB=ON  PLU=ON  L83 AND (PY<2005 OR
                PRY<2005 OR AY<2005)
L85          15 SEA FILE=JAPIO ABB=ON  PLU=ON  L75 AND (SPECIMEN# OR
                SAMPLE#)
L86           0 SEA FILE=JAPIO ABB=ON  PLU=ON  L85 AND (COLOR? OR COLOUR?)

L87           1 SEA FILE=JAPIO ABB=ON  PLU=ON  L85 AND COAT?
L88           0 SEA FILE=JAPIO ABB=ON  PLU=ON  L85 AND LENGTH(3A)TIME?
L89           3 SEA FILE=JAPIO ABB=ON  PLU=ON  L85 AND (TIME OR TIMING)
L90           0 SEA FILE=JAPIO ABB=ON  PLU=ON  L85 AND L31
L91          28 SEA FILE=JAPIO ABB=ON  PLU=ON  (L84 OR L85 OR L86 OR L87
                OR L88 OR L89 OR L90)
L92          16 SEA FILE=JAPIO ABB=ON  PLU=ON  L91 AND METAL?
L93          16 SEA FILE=JAPIO ABB=ON  PLU=ON  L92 AND (PY<2005 OR
                PRY<2005 OR AY<2005)
L94          16 SEA FILE=JAPIO ABB=ON  PLU=ON  L84 OR L93


=> dup rem l133 l131 l120 l109 l94
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PROCESSING COMPLETED FOR L133
PROCESSING COMPLETED FOR L131
PROCESSING COMPLETED FOR L120
PROCESSING COMPLETED FOR L109
PROCESSING COMPLETED FOR L94
L134         76 DUP REM L133 L131 L120 L109 L94 (11 DUPLICATES REMOVED)
                ANSWERS '1-28' FROM FILE HCAPLUS
                ANSWERS '29-46' FROM FILE WPIX
                ANSWERS '47-53' FROM FILE PASCAL
                ANSWERS '54-60' FROM FILE COMPENDEX
                ANSWERS '61-76' FROM FILE JAPIO

=> d 1-28 ibib ed abs hitstr hitind

L134 ANSWER 1 OF 76  HCAPLUS  COPYRIGHT 2008 ACS on STN DUPLICATE 1
ACCESSION NUMBER:         2005:641713  HCAPLUS  Full-text
DOCUMENT NUMBER:          143:137352
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```
TITLE:                      Chemical test with ammonium molybdate
                            for sol-gel coating residue on
                            aluminum alloy rivets
INVENTOR(S):                Tomt, Terry C.; Davis, Bruce R.; Jones, Steven R.;
                            Wire, Richard G.
PATENT ASSIGNEE(S):         The Boeing Company, USA
SOURCE:                     U.S. Pat. Appl. Publ., 10 pp.
                            CODEN: USXXCO
DOCUMENT TYPE:              Patent
LANGUAGE:                   English
FAMILY ACC. NUM. COUNT:     1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
     US 20050158862       A1    20050721   US 2004-762073         20040120
                                                     <--
     EP 1557668           A1    20050727   EP 2004-78401          20041215
                                                     <--
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
             PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
             PL, SK, BA, HR, IS, YU
PRIORITY APPLN. INFO.:                         US 2004-762073      A  20040120
                                                     <--
ED   Entered STN:  22 Jul 2005
AB    The chemical test for the presence of sol-gel residue on Al or Al-alloy
      specimens (especially rivets) includes: (a) preparing aqueous NH4 molybdate
      solution; (b) preparing aqueous HCl solution; and (c) mixing the solns. in 2:1
      ratio in receptacles.  An Al test specimen with unknown coating, a 1st control
      specimen, and 2nd control specimen are placed in sep. receptacles with the
      mixed solution  The 1st control specimen has a sol-gel coating over an Alodine
      coating, and the 2nd control specimen has only Alodine coating.  By timing the
      change in color of the test and control specimens (or the solution becoming
      opaque), the method dets. the type of coating on the test specimen.  The
      Alodine coating on Al-alloy rivets promoted dark-blue color in the test
      solution in nominally 8.5 min, vs. 21 min in the presence of combined Alodine
      and sol-gel coating.
IC   ICM  G01N021-00
INCL 436005000; 436166000
CC   56-10 (Nonferrous Metals and Alloys)
ST   aluminum alloy rivet sol gel coating color
     test soln; acidic molybdate soln test sol
     gel coating aluminum rivet
IT   Colorimetry
        (chemical test by, for sol-gel residue;
        color test with NH4 molybdate for sol-
        gel coating residue on aluminum alloy rivets)
IT   Sol-gel processing
        (coating, residue, chemical test for; color
        test with NH4 molybdate for sol-gel
        coating residue on aluminum alloy rivets)
IT   Fasteners
        (rivets, Al-alloy; chemical test with NH4 molybdate for
        sol-gel coating residue on aluminum alloy rivets)
IT   Coating process
        (sol-gel, residue, chemical test for;
        color test with NH4 molybdate for sol-
        gel coating residue on aluminum alloy rivets)
IT   Aluminum alloy, base
        (rivets, test for sol-gel residue on;
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chemical test with NH4 molybdate for sol-
gel coating residue on aluminum alloy rivets)
IT 12626-23-2, Alodine
(coating, test for; chemical test with NH4
molybdate for sol-gel coating residue on
aluminum alloy rivets)
IT 7429-90-5, Aluminum, uses
(rivets, test for sol-gel residue on;
chemical test with NH4 molybdate for sol-
gel coating residue on aluminum alloy rivets)
IT 7647-01-0, Hydrochloric acid, uses 12027-67-7, Ammonium molybdate
(test solution with; chemical test with NH4 molybdate
for sol-gel coating residue on aluminum alloy
rivets)

L134 ANSWER 2 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2004:66969 HCAPLUS Full-text
DOCUMENT NUMBER: 141:42800
TITLE: Reliability weibull analysis for structural evaluation of bioactive films obtained by sol-gel process
AUTHOR(S): Pelaez, Alejandro; Garcia, Claudia; Correa, Juan Carlos; Abad, Pablo
CORPORATE SOURCE: Instituto de Ciencias de la Salud. CES. Facultad de Odontologia, Universidad Nacional de Colombia sede Medellin, Facultad de Ciencias, Medellin, A.A. 3840, Colombia
SOURCE: Key Engineering Materials (2004), 254-256(Bioceramics), 431-434
CODEN: KEMAEY; ISSN: 1013-9826
PUBLISHER: Trans Tech Publications Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 28 Jan 2004
AB Gaussian distributions are the most frequently reported method used for the evaluation of the mech. properties of materials, although these distributions only characterize the statistical behavior of the metallic materials used as substrates. However, it is the mech. flaw in the case of glass coating the one that finally prevails as agent of strange body. Therefore, the anal. should be centered in the asym. statistical distribution that characterizes the answer of the bioceramic coating. In this study the anal. of reliability of Weibull is used with the objective of verifying if a glass substratum with a bioactive layer obtained by sol - gel method acquires a smaller variation range in the resistance values to the fracture, and therefore, its structural reliability is bigger than that of the glass without coating . Thirty samples per group was prepared and tested. The exptl. group was formed by microscope colorless glass slides of 75 mm + 25 mm + 1 mm coated with a suspension of a sol of silica and bioactive glass particles, and the control group was formed by the uncoated microscope glass slides. The three point flexure test was used to measure the fracture force of two groups. The fracture stress values were analyzed by two parameter Weibull anal. to determine the modulus values (m) and 5% probabilities of failure. Finally, results showed that the flexural strength average of the coated samples have lower values whose difference is not statistically significant with respect to the uncoated samples. Moreover, the value of the variance for the coated samples is much smaller and the Weibull modulus is higher for the coated samples than for the uncoated samples. The coated samples show more reliability and the Weibull anal. of the strength data characterizes more completely the fracture potential of this material. A higher value of Weibull modulus ensures fewer fatal flaws, a smaller error in strength estimation and a greater practical

reliability. The application of a bioactive particle containing coating, improves the reliability of the failure strength of the glass substrate in the lower values of the curve.

CC 63-7 (Pharmaceuticals)

ST weibull reliability bioactive glass sol gel coating

IT Statistical analysis
(Weibull; reliability weibull anal. for structural evaluation of bioactive films obtained by sol-gel process)

IT Prosthetic materials and Prosthetics
(bioactive glass; reliability weibull anal. for structural evaluation of bioactive films obtained by sol-gel process)

IT Bending strength
Sol-gel processing
Stress, mechanical
(reliability weibull anal. for structural evaluation of bioactive films obtained by sol-gel process)

IT 78-10-4, Tetraethyl orthosilicate 1306-06-5, Hydroxyapatite 2031-67-6, Methyltriethoxysilane 7631-86-9, Silica, biological studies 10124-31-9, Ammonium phosphate 10124-37-5, Calcium nitrate
(reliability weibull anal. for structural evaluation of bioactive films obtained by sol-gel process)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L134 ANSWER 3 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 2004:822064 HCAPLUS Full-text
DOCUMENT NUMBER: 142:320957
TITLE: Preparation and electrochemical study of cerium-silica sol-gel thin films
AUTHOR(S): Garcia-Heras, M.; Jimenez-Morales, A.; Casal, B.; Galvan, J. C.; Radzki, S.; Villegas, M. A.
CORPORATE SOURCE: Centro Nacional de Investigaciones Metalurgicas, Madrid, 28040, Spain
SOURCE: Journal of Alloys and Compounds (2004), 380(1-2), 219-224
CODEN: JALCEU; ISSN: 0925-8388
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 08 Oct 2004

AB Design and development of suitable multilayered systems for delaying corrosion advance in metals requires that both the alteration mechanisms of the metal and the behavior and properties of the protective coatings be known. Coatings prepared by the sol-gel method provide a good approach as protective layers on metallic surfaces. These kinds of coatings can be prepared from pure chemical reagents at room temperature and atmospheric pressure, with compns. in a very wide range of environmentally non-aggressive precursors. Sol-gel coatings based on siloxane bonded units were prepared starting from an organic-inorg. hybrid system. The precursors were γ-methacryloxypropyltrimethoxysilan e (MAP) and tetramethoxysilane (TMOS). Cerium nitrate hexahydrate in three different concns. was added. Cerium salts may perform a similar protective effect to that carried out by the well-known lead oxides and chromium salts, even though in this case a neg. environmental impact is not expected. Application of coatings upon pure zinc substrates and common glass slides were performed by spinning. Coated samples were heat treated at 40°C for 6 days.

Optical measurements (UV-Vis absorption and diffuse reflectance spectroscopies) pointed out that the coatings were colorless and transparent, reducing the diffuse reflectance of the metallic surface up to .apprx.60%. Optical and scanning electron microscopies (SEM) allowed observation of the texture and microstructure of the coated samples, both before and after the corrosion tests were carried out. Likewise, the remaining sols were kept to gelify at 60°C for 4 days and then powdered to obtain suitable samples for analyzing them by other characterization techniques (FTIR and DTA). Electrochem. measurements were performed by impedance spectroscopy. This technique was used to clarify the anticorrosive protection role of cerium ions incorporated into the hybrid sol-gel network. The effect of cerium concentration on the impedance spectra was analyzed, as well as the system behavior against the corrosive medium (0.6 M NaCl aqueous solns.), as a function of exposure time. From the electrochem. point of view, the sol-gel films behave as a conversion coating on the metallic surface.

CC 57-2 (Ceramics)
Section cross-reference(s): 38, 56, 73

ST silica hybrid coating cerium dopant sol gel prepn property

IT Coating materials
(anticorrosive, cerium-doped silica; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT Antireflective films
(cerium-doped silica; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT Optical reflection
(diffuse; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT Silica gel, preparation
(organically modified, cerium-doped, coatings; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT Hybrid organic-inorganic materials
(silica-based, cerium-doped; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT Glass substrates
Optical absorption
Sol-gel processing
(sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT 156327-78-5P, γ-Methacryloxypropyltrimethoxysilane-tetramethoxysilane copolymer
(cerium-doped, coatings; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT 7647-14-5, Sodium chloride (NaCl), uses
(corrosive medium; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT 7440-45-1, Cerium, uses
(dopant; sol-gel preparation and optical and electrochem. properties of cerium-doped silica organic-inorg. hybrid thin films)

IT 7631-86-9P, Silica, preparation
(organically modified, cerium-doped, coatings; sol-gel preparation and optical and electrochem.

properties of cerium-doped silica organic-inorg. hybrid thin films)
IT 681-84-5 2530-85-0, γ-Methacryloxypropyltrimethoxysilane
10108-73-3, Cerium nitrate
(precursor; sol-gel preparation and optical and
electrochem. properties of cerium-doped silica organic-inorg. hybrid
thin films)
IT 7440-66-6, Zinc, uses
(substrate; sol-gel preparation and optical and
electrochem. properties of cerium-doped silica organic-inorg. hybrid
thin films)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L134 ANSWER 4 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2004:760132 HCAPLUS Full-text
DOCUMENT NUMBER: 142:63249
TITLE: Superficial modification of aluminum-base alloys (anodizing and non-anodizing) by silica coatings
AUTHOR(S): Garcia-Heras, M.; Gonzalez-Mena, E.; Galvan, J. C.; Villegas, M. A.
CORPORATE SOURCE: Centro Nacional de Investigaciones Metalurgicas, CENIM, CSIC, Madrid, 28040, Spain
SOURCE: Revista de Metalurgia (Madrid, Spain) (2004), 40(2), 127-131
CODEN: RMTGAC; ISSN: 0034-8570
PUBLISHER: Centro Nacional de Investigaciones Metalurgicas
DOCUMENT TYPE: Journal
LANGUAGE: Spanish
ED Entered STN: 17 Sep 2004
AB Transparent and colorless silica coatings were deposited on anodizing and non-anodizing substrates of aluminum-base alloys (series 6063). Coatings were prepared by sol -gel (dipping method) from a silica alkoxide and a mixture of both silica alkoxide and silica alkylalkoxide. Prepns. were optimized from viscosity, d., surface tension, and contact angle measurements. Densification was carried out at 60 and 120°C. Reflectance attenuation of coated samples was analyzed by UV-VIS-NIR spectroscopy. The results indicated that .apprx.10 % of attenuation is reached. Durability and resistance against degradation tests of the metal/coating system were undertaken by immersion into aqueous solns. Electrochem. impedance measurements and potential corrosion of the metallic substrate for variable times were performed.
CC 66-5 (Surface Chemistry and Colloids)
Section cross-reference(s): 42, 56, 73, 76
ST surface modification aluminum alloy silica coating
sol gel
IT Contact angle
Electric impedance
IR reflectance spectra
(of anodized and non-anodized aluminum-base alloys silica with and
without silica coatings)
IT Surface tension
Viscosity
(of silica gel for anodized and non-anodized aluminum-base alloys
coatings with silica)
IT Coating materials
Coating process
Surface treatment
(superficial modification of aluminum-base alloys (anodizing and
non-anodizing) by silica coatings)

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IT   Sol-gel processing
        (superficial modification of aluminum-base alloys (anodizing and
        non-anodizing) by silica coatings by)
IT   Aluminum alloy, base
        (superficial modification (anodizing and non-anodizing) by silica
        coatings)
IT   64-17-5, Ethanol, uses
        (solvent; superficial modification of aluminum-base alloys
        (anodizing and non-anodizing) by silica coatings by
        sol-gel processing using)
IT   11121-92-9, AA6063
        (superficial modification (anodizing and non-anodizing) by silica
        coatings)
IT   7631-86-9P, Silica, processes
        (superficial modification of aluminum-base alloys (anodizing and
        non-anodizing) by silica coatings)
IT   78-10-4, Tetraethoxysilicon   2031-67-6, Methyltriethoxysilane
     7647-01-0, Hydrochloric acid, processes
        (superficial modification of aluminum-base alloys (anodizing and
        non-anodizing) by silica coatings by sol-
        gel processing using)
REFERENCE COUNT:         7     THERE ARE 7 CITED REFERENCES AVAILABLE FOR
                               THIS RECORD. ALL CITATIONS AVAILABLE IN THE
                               RE FORMAT

L134 ANSWER 5 OF 76  HCAPLUS  COPYRIGHT 2008 ACS on STN DUPLICATE 5
ACCESSION NUMBER:        2003:622521  HCAPLUS  Full-text
DOCUMENT NUMBER:         139:167815
TITLE:                   Stabilized alkoxyzirconium sol for pigmented type
                         coating on metal surface
INVENTOR(S):             Krienke, Kenneth A.; Blohowiak, Kay Y.; Olli,
                         Larry K.; Osborne, Joseph H.
PATENT ASSIGNEE(S):      The Boeing Company, USA
SOURCE:                  U.S., 25 pp., Cont.-in-part of U.S. Ser. No.
                         742,168.
                         CODEN: USXXAM
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  6
PATENT INFORMATION:

     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
     US 6605365           B1    20030812   US 1998-169280         19981008
                                                  <--
     US 5849110           A     19981215   US 1996-742168         19961104
                                                  <--
     US 5958578           A     19990928   US 1996-742171         19961104
                                                  <--
     US 20040009344       A1    20040115   US 2003-384908         20030307
                                                  <--
     US 7001666           B2    20060221
     US 20050229816       A1    20051020   US 2005-138620         20050525
                                                  <--
PRIORITY APPLN. INFO.:                     US 1996-740884      A2 19961104
                                                  <--
                                           US 1996-742168      A2 19961104
                                                  <--
                                           US 1996-742170      B2 19961104
                                                  <--
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US 1996-742171 A2 19961104
<--
US 1997-68715P P 19971223
<--
US 1996-742169 A2 19961104
<--
US 1998-169280 A3 19981008
<--
US 2003-384908 A1 20030307
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ED Entered STN: 13 Aug 2003

AB The metal (especially Ti or Al-alloy) surface is treated to form a pigmented coating with a Zr-Si sol-gel film covalently bonded on the surface, and containing added pigment for controlled color, gloss, reflectivity, elec. conductivity, and/or thermal emissivity over a wide temperature range. The sol- gel coating is based on aqueous sol containing alkoxyzirconium and organosilane with an organic acid catalyst and Zr stabilizer, and is applied on the etched or grit-blasted metal substrates in a single application, and is dried for the strength and performance comparable to standard anodized coatings. The pigmented coating retains its stability and impact resistance after exposures to the temps. from -321° F to 750° F. The coating optionally contains powdered C or graphite pigment for elec. conductivity

IC ICM B32B015-04

INCL 428472000; 428328000

CC 56-6 (Nonferrous Metals and Alloys)
Section cross-reference(s): 42, 57

ST aluminum alloy surface coating alkoxyzirconium sol pigmenting; titanium surface coating alkoxyzirconium sol pigmenting

IT Sols
(alkoxyzirconium; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT Electric conductivity
(coating with, pigment in sol-gel layer for; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT Carbon black, uses
(pigment, coating with elec. conductive; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT Coating materials
(sol-gel; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT Aluminum alloy, base
(coating of; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT 7440-32-6, Titanium, processes 12616-84-1, AA 2024
(coating of; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT 7782-42-5, Graphite, uses
(pigment, coating with elec. conductive; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT 64-19-7, Acetic acid, uses
(sol-gel coating with; stabilized alkoxyzirconium sol for pigmented type coating on metal surface)

IT 2530-83-8, 3-Glycidoxypropyltrimethoxysilane 23519-77-9, Tetra-n-propoxyzirconium

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     (sol-gel coating with; stabilized
     alkoxyzirconium sol for pigmented type coating on
     metal surface)
REFERENCE COUNT:         54    THERE ARE 54 CITED REFERENCES AVAILABLE FOR
                               THIS RECORD. ALL CITATIONS AVAILABLE IN THE
                               RE FORMAT

L134 ANSWER 6 OF 76  HCAPLUS  COPYRIGHT 2008 ACS on STN DUPLICATE 6
ACCESSION NUMBER:        2003:112931  HCAPLUS  Full-text
DOCUMENT NUMBER:         138:155093
TITLE:                   Corrosion-resistant metal flake
                         pigments, manufacture thereof, and interference
                         colored lustrous pigments therefrom
INVENTOR(S):             Li, Bang-yin; Nakamura, Nobuaki; Nitta, Katsuhisa
PATENT ASSIGNEE(S):      Merck Japan Limited, Japan
SOURCE:                  Jpn. Kokai Tokkyo Koho, 23 pp.
                         CODEN: JKXXAF
DOCUMENT TYPE:           Patent
LANGUAGE:                Japanese
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
     JP 2003041150        A     20030213   JP 2001-234461         20010802
                                                  <--
     JP 3581339           B2    20041027
     WO 2003014228        A1    20030220   WO 2002-EP7221         20020701
                                                  <--
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
             LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
             NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
             TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
             BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU,
             MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
     AU 2002355453        A1    20030224   AU 2002-355453         20020701
                                                  <--
     EP 1412433           A1    20040428   EP 2002-794496         20020701
                                                  <--
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
             PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
     BR 2002011603        A     20040824   BR 2002-11603          20020701
                                                  <--
     CN 1538995           A     20041020   CN 2002-815175         20020701
                                                  <--
     RU 2311433           C2    20071127   RU 2004-106526         20020701
                                                  <--
     MX 2004PA00875       A     20040521   MX 2004-PA875          20040128
                                                  <--
     US 20040194663       A1    20041007   US 2004-485483         20040202
                                                  <--
     IN 2004KN00259       A     20060407   IN 2004-KN259          20040226
                                                  <--
PRIORITY APPLN. INFO.:                     JP 2001-234461      A  20010802
                                                  <--
                                           WO 2002-EP7221      W  20020701
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ED Entered STN: 13 Feb 2003

AB The pigments are manufactured by (i) dispersing metal flakes (Al, Ti, Au, Ag, Cu-Zn, stainless steel, or bronze) in polar organic solvents, (ii) adding H3PO4 and/or H3BO4 compds. and stirring for passivation of the metal surfaces, and (iii) coating the flakes with metal (Si, Al, Zr, Ti, and/or Sn) oxide hydrates by sol-gel method, e.g., hydrolysis of metal alkoxides in the presence of basic catalysts, for making anticorrosive layers. The pigments may be further coated with metal (Ti, Al, Zr, Sn, Zn, Fe, Cr, Co, Si, and/or B) oxide hydrates (by wet process) to give interference colored lustrous pigments, whose surfaces are fine and uniform to show good goniochromic colors. Compns. containing the pigments and other (in)organic (optically effective or functional) pigments and/or fillers, aqueous coatings and inks containing the pigments, and their printed materials are also claimed. Thus, aluminum flakes (Sparkle Silver SS 5588) were treated with H3PO3 in acetone and then with Si(OEt)4 in the presence of aqueous NH4OH to give corrosion-resistant pigments showing little H production after 120-min immersion in aqueous HCl (pH 1.8) at 75°.

IC ICM C09C001-62
ICS C08K009-02; C08L101-00; C09D007-12; C09D011-00; C09D011-02; C09D201-00

CC 42-6 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38, 49, 56, 62

ST corrosion resistant metal flake pigment silicon oxide; aluminum flake phosphoric acid passivated anticorrosive; interference color pigment metal oxide hydrate coated; metal alkoxide sol gel hydrolysis pigment surface

IT Aminoplasts
(acrylic, coating binders; metal flake pigments having anticorrosive layers (and interference colored layers) of metal oxide hydrates)

IT Acrylic polymers, uses
(aminoplast-, coating binders; metal flake pigments having anticorrosive layers (and interference colored layers) of metal oxide hydrates)

IT Hydrolysis catalysts
(basic, for making anticorrosive layers; metal flake pigments having anticorrosive layers (and interference colored layers) of metal oxide hydrates)

IT Metal alkoxides
(for metal oxide hydrates, in anticorrosive layers; metal flake pigments having anticorrosive layers (and interference colored layers) of metal oxide hydrates)

IT Cosmetics
(foundations; metal flake pigments having anticorrosive layers (and interference colored layers) of metal oxide hydrates)

IT Coating materials
(glossy, water-thinned; metal flake pigments having anticorrosive layers (and interference colored layers) of metal oxide hydrates)

IT Oxides (inorganic), uses
(hydrates, anticorrosive layers; metal flake pigments having anticorrosive layers (and interference colored layers) of metal oxide hydrates)

IT Sol-gel processing
(hydrolysis of metal alkoxides, for making anticorrosive layers; metal flake pigments having anticorrosive layers

(and interference colored layers) of metal
oxide hydrates)

IT Pearlescent pigments
(interference colored; metal flake pigments
having anticorrosive layers (and interference colored
layers) of metal oxide hydrates)

IT Cosmetics
(metal flake pigments having anticorrosive layers (and
interference colored layers) of metal oxide
hydrates)

IT Pigments, nonbiological
(metallic, corrosion-resistant; metal flake
pigments having anticorrosive layers (and interference
colored layers) of metal oxide hydrates)

IT Metals, uses
(pigment substrates; metal flake pigments having
anticorrosive layers (and interference colored layers) of
metal oxide hydrates)

IT Molded plastics, miscellaneous
(pigmented; metal flake pigments having anticorrosive
layers (and interference colored layers) of metal
oxide hydrates)

IT Cosmetics
(powders; metal flake pigments having anticorrosive
layers (and interference colored layers) of metal
oxide hydrates)

IT Inks
(printing, water-thinned, metallic; metal flake
pigments having anticorrosive layers (and interference
colored layers) of metal oxide hydrates)

IT 7429-90-5, 5422NS, uses
(SL 800, 550N, Sparkle Silver SS 5588, flakes, pigment substrates;
metal flake pigments having anticorrosive layers (and
interference colored layers) of metal oxide
hydrates)

IT 11099-06-2P, Tetraethoxysilane homopolymer
(anticorrosive layers; metal flake pigments having
anticorrosive layers (and interference colored layers) of
metal oxide hydrates)

IT 1314-23-4, Zirconium oxide, uses 1332-29-2, Tin oxide 1344-28-1,
Aluminum oxide, uses 7631-86-9, Silicon oxide, uses
(anticorrosive layers; metal flake pigments having
anticorrosive layers (and interference colored layers) of
metal oxide hydrates)

IT 1336-21-6, Ammonium hydroxide
(catalysts for metal alkoxide hydrolysis, in
anticorrosive layers; metal flake pigments having
anticorrosive layers (and interference colored layers) of
metal oxide hydrates)

IT 110649-47-3P, Acrydic 47-712-Super Beckamine G 821-60 copolymer
(coating binders; metal flake pigments having
anticorrosive layers (and interference colored layers) of
metal oxide hydrates)

IT 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-57-5, Gold,
uses 11143-56-9 12597-68-1, Stainless steel, uses 12597-70-5,
Bronze
(flakes, pigment substrates; metal flake pigments having
anticorrosive layers (and interference colored layers) of
metal oxide hydrates)

IT 7550-45-0, Titanium tetrachloride, processes

(for metal oxide hydrates, in anticorrosive layers;
metal flake pigments having anticorrosive layers (and
interference colored layers) of metal oxide
hydrates)

IT 9002-88-4, Polyethylene
(high-d., pellets, pigmented; metal flake pigments having
anticorrosive layers (and interference colored layers) of
metal oxide hydrates)

IT 9004-70-0, Nitrocellulose
(ink binders; metal flake pigments having anticorrosive
layers (and interference colored layers) of metal
oxide hydrates)

IT 1303-86-2, Boron oxide, uses 1314-13-2, Zinc oxide, uses
1332-37-2, Iron oxide, uses 11104-61-3, Cobalt oxide 11118-57-3,
Chromium oxide
(interference color layers; metal flake
pigments having anticorrosive layers (and interference
colored layers) of metal oxide hydrates)

IT 7664-38-2, Phosphoric acid, uses 10043-35-3, Boric acid, uses
29658-76-2, Monoisodecyl phosphate
(metal flake passivators; metal flake pigments
having anticorrosive layers (and interference colored
layers) of metal oxide hydrates)

IT 13463-67-7P, Titania, uses
(rutile-type, interference color layers; metal
flake pigments having anticorrosive layers (and interference
colored layers) of metal oxide hydrates)

L134 ANSWER 7 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 7

ACCESSION NUMBER: 1999:795236 HCAPLUS Full-text

DOCUMENT NUMBER: 132:158859

TITLE: Optical properties of photochromic organic-inorganic composites

AUTHOR(S): Mo, Y.-G.; Dillon, R. O.; Snyder, P. G.; Tiwald, T. E.

CORPORATE SOURCE: Center for Microelectronic and Optical Materials Research and Department of Electrical Engineering, University of Nebraska, Lincoln, NE, USA

SOURCE: Thin Solid Films (1999), 355-356, 1-5
CODEN: THSFAP; ISSN: 0040-6090

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 17 Dec 1999

AB The authors prepared several photochromic composite films based on a hybrid organic-inorg. matrix in which metal heteropolyoxometalates are entrapped. IR Fourier transform and UV-Visible spectroscopic ellipsometry methods have been used for the first time to study the coloring/bleaching process of the composite films. Data on all samples were acquired using a J.A. Woollam Co. VASE instrument and WVASE software. The optical absorption of these spin-coated films changed markedly by a reversible process, in the presence or absence of UV irradiation The VIS-NIR transmission data showed that the films containing tungsten heteropolyoxometalate (HPOM) had strong absorptions at about 720 nm, 1108 nm and the films containing molybdenum HPOM had a strong absorption at 720 nm. The authors have also extracted for the first time the visible and IR optical functions of the films. For the colored films, the Lorentz and Gaussian oscillators were used to describe the optical behavior in the 400-1700 nm wavelength range and 700-4000 cm-1 wavenumber range, resp. The composite films containing tungsten heteropolyoxometalate (HPOM) showed faster coloration and bleaching than pure tungsten oxide films. The composite

films with molybdenum HPOM showed faster coloration and much slower bleaching than tungsten HPOM.

CC 74-9 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

ST optical property photochromic org inorg composite; metal heteropolyoxometalate photochromic org inorg composite; visible IR optical function photochromic polyoxometalate composite film

IT Heteropoly acids
(molybdophosphoric; optical properties of photochromic organic-inorg. composite films containing tungsten and molybdenum polyoxometalates prepared by sol-gel process)

IT Sol-gel processing
(optical properties of photochromic organic-inorg. composite films containing tungsten and molybdenum polyoxometalates prepared by sol-gel process)

IT Heteropoly acids
(tungstophosphoric; optical properties of photochromic organic-inorg. composite films containing tungsten and molybdenum polyoxometalates prepared by sol-gel process)

IT Heteropoly acids
(tungstosilicic; optical properties of photochromic organic-inorg. composite films containing tungsten and molybdenum polyoxometalates prepared by sol-gel process)

IT 11104-88-4, Phosphomolybdic acid 12067-99-1, Phosphotungstic acid 55957-17-0, Silicotungstic acid
(optical properties of photochromic organic-inorg. composite films containing tungsten and molybdenum polyoxometalates prepared by sol-gel process)

IT 2530-83-8, 3-Glycidoxypropyltrimethoxysilane
(optical properties of photochromic organic-inorg. composite films containing tungsten and molybdenum polyoxometalates prepared by sol-gel process using)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L134 ANSWER 8 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 8

ACCESSION NUMBER: 1998:48044 HCAPLUS Full-text
DOCUMENT NUMBER: 128:157405
TITLE: New sol-gel based coatings as corrosion- and wear-protection on nonferrous metals
AUTHOR(S): Langenfeld, S.; Jonschker, G.; Schmidt, H.
CORPORATE SOURCE: Inst. Neue Materialien G.m.b.H., Saarbruecken, D-66123, Germany
SOURCE: Materialwissenschaft und Werkstofftechnik (1998), 29(1), 23-29
CODEN: MATWER; ISSN: 0933-5137
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: German

ED Entered STN: 28 Jan 1998

AB A new anticorrosive coating for non-ferrous alloys (Al, Mg, Zn, and brass) was developed on the basis of inorg.-organic composites. Coating materials were prepared from epoxyalkoxysilanes (e.g. 3-glycidyloxypropyltrimethoxysilane) and aromatic diols (e.g. bisphenol A) by the sol-gel method using alcs. and glycol ethers as solvents. The viscosity of the system was adjusted to 7-55 mPa·s to be able to perform spray, dip, or flow coating processes. After curing at 100-220°, transparent coatings with excellent adhesion properties on

Al, Mg, Zn, and brass were obtained. With different corrosion tests, neither infiltration into the metal-coating interface nor filiform-corrosion were observed on Al99.5, AlMg3, and AlMgSi1. Brass samples exhibited ≤4 mm extension of a scribe after 500 h of the salt-spraying test. The taber abrader test revealed high abrasion resistance and good adhesion properties of the coatings. The transparent basic systems were pigmented with colored organic pigments (5-10 wt%) to produce a wide variety of colored coatings.

CC 56-6 (Nonferrous Metals and Alloys)
Section cross-reference(s): 38, 42, 57

ST corrosion wear protection nonferrous alloy coating; abrasion corrosion resistance composite coating alloy; sol gel ceramic polymer hybrid coating; hybrid org inorg anticorrosive coating; siloxane silica hybrid anticorrosive coating

IT Coating materials
(abrasion-resistant; sol-gel based organic-inorg. hybrid materials as anticorrosive and antiwear coatings on nonferrous metals)

IT Coating materials
(anticorrosive; sol-gel based organic-inorg. hybrid materials as anticorrosive and antiwear coatings on nonferrous metals)

IT Ceramics
Hybrid organic-inorganic materials
Sol-gel processing
(sol-gel based organic-inorg. hybrid materials as anticorrosive and antiwear coatings on nonferrous metals)

IT Polymers, processes
(sol-gel based organic-inorg. hybrid materials as anticorrosive and antiwear coatings on nonferrous metals)

IT 56325-93-0DP, 3-Glycidyloxypropyltrimethoxysilane homopolymer, reaction product with silica and bisphenol A
(ceramic coating; sol-gel based organic-inorg. hybrid materials as anticorrosive and antiwear coatings on nonferrous metals)

IT 7440-66-6, Zinc, processes 12634-54-7, AZ91 12732-13-7, AlMgSi1 59093-27-5, Al99.5 65394-05-0, AlMg3 85641-17-4 145684-18-0, AM20 145684-19-1, AM50
(sol-gel based organic-inorg. hybrid materials as anticorrosive and antiwear coatings on nonferrous metals)

IT 80-05-7DP, Bisphenol A, reaction product with silica and 3-glycidyloxypropyltrimethoxysilane 60676-86-0DP, Vitreous silica, reaction product with 3-glycidyloxypropyltrimethoxysilane and bisphenol A
(sol-gel based organic-inorg. hybrid materials as anticorrosive and antiwear coatings on nonferrous metals)

L134 ANSWER 9 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 9

ACCESSION NUMBER: 1996:247366 HCAPLUS Full-text
DOCUMENT NUMBER: 124:295861
TITLE: Metal protection by cold sintered silica gel coatings
AUTHOR(S): Mascia, L.; Zhang, Z.
CORPORATE SOURCE: INst. Polymer Technol. Mater. Eng., Loughborough Univ. Technol., Loughborough, L311 3TU, UK
SOURCE: British Corrosion Journal (1996), 31(1), 76-7
CODEN: BCRJA3; ISSN: 0007-0599
PUBLISHER: Institute of Materials
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 26 Apr 1996
AB Sol-gel coatings were deposited on copper foil specimens by the sol-gel method and were subsequently treated at room temperature with air and argon plasma, resp. After a 1 h exposure to a thermoxidative atmospheric in a furnace at 400 to 500° the Cu foil coated specimens treated for longer times with either air or argon plasma, showed no change in color or weight losses, whereas the untreated coated specimens and the uncoated specimens formed black oxidized layers which easily flaked off and gave rise to weight losses of .apprx.8-9%. Transmission electron microscopic examns. of sol-gel coatings on polyethylene terephthalate films, treated with air and argon plasma under the same conditions, revealed the formation of a densified outer layer, .apprx.30 nm thick, which resulted from the sintering action of the plasma treatment.
CC 56-6 (Nonferrous Metals and Alloys)
ST copper cold sintered silica gel coating
IT Coating materials
Films
Furnaces
Plasma
(metal protection by cold sintered silica gel coatings)
IT 7440-37-1, Argon, analysis
(metal protection by cold sintered silica gel coatings)
IT 7440-50-8, Copper, processes
(metal protection by cold sintered silica gel coatings)
IT 7631-86-9, Silica, uses 25038-59-9, Polyethylene terephthalate, uses
(metal protection by cold sintered silica gel coatings)

L134 ANSWER 10 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:29418 HCAPLUS Full-text
DOCUMENT NUMBER: 144:112560
TITLE: Sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion
INVENTOR(S): Costa, Fulvio; Gini, Lucia; Giardino, Vincenzo; Costa, Lorenzo
PATENT ASSIGNEE(S): Novara Technology S.r.l., Italy
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006002648	A1	20060112	WO 2004-EP6869 <--	20040625
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
EP 1761470	A1	20070314	EP 2004-763024	20040625

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                                        <--
   R:  AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
       IE, IT, LI, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR
  JP 2008503429       T     20080207   JP 2007-516979      20040625
                                        <--
  US 20070141359      A1    20070621   US 2006-629774      20061215
                                        <--
  KR 2007032711       A     20070322   KR 2006-727030      20061222
                                        <--
PRIORITY APPLN. INFO.:                 WO 2004-EP6869    W 20040625
                                        <--
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ED Entered STN: 12 Jan 2006

AB The present invention relates to glassy inorg. films, characterized by a high chemical stability and a high adhesion, containing, among the others, titanium dioxide, employable to coat metal surfaces characterized by the presence of oxides, particularly stainless steel sheets. The coated structures obtained thereby, which are the second object of the present invention, are used to build many articles such as pipes, reactors, exchangers, containers, and so on. With reference to the peculiar case of stainless steel structures coated by the above film, these ones can be used in the food industry since that film coated article shows specific and very high photobactericide properties.

IC ICM C03C008-08
ICS C03C008-20

CC 57-4 (Ceramics)
Section cross-reference(s): 55

ST sol gel coating stainless steel titania phosphate glassy film

IT Sol-gel processing
(coating, dip; sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion)

IT Antibacterial agents
(photobactericides; sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion)

IT Adhesion, physical
Microhardness
(sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion)

IT Coating process
(sol-gel, dip; sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion)

IT 1313-59-3, Sodium oxide, properties 1314-56-3, Phosphorus pentoxide, properties 1344-28-1, Alumina, properties
(coatings containing; sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion)

IT 13463-67-7, Titanium dioxide, processes
(microcryst.; sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion)

IT 67-64-1, Acetone, processes 123-54-6, Acetylacetone, processes 546-68-9, Titanium tetraisopropoxide 2031-67-6, Methyltriethoxysilane 4073-85-2, Tripropoxyaluminum 7664-38-2, Phosphoric acid, processes 13933-52-3, Sodium phosphite (NaH2PO3)
(sol-gel coating of stainless steel with titanium dioxide-containing phosphate glassy films with good adhesion)

IT 11134-23-9, AISI 316 L 12597-68-1, Stainless steel, uses
(substrate; sol-gel coating of
stainless steel with titanium dioxide-containing phosphate glassy films
with good adhesion)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L134 ANSWER 11 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:929110 HCAPLUS Full-text
DOCUMENT NUMBER: 147:240829
TITLE: Process of coloring metal
surfaces via sol-gel
method, formed composites and use
INVENTOR(S): Vasconcelos, Wander Luiz.; Vasconcelos, Daniela
Cordeiro Leite.
PATENT ASSIGNEE(S): Universidade Federal de Minas Gerais, Brazil
SOURCE: Braz. Pedido PI, 18pp.
CODEN: BPXXDX
DOCUMENT TYPE: Patent
LANGUAGE: Portuguese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 2004004581	A	20060516	BR 2004-4581 <--	20040929
PRIORITY APPLN. INFO.:			BR 2004-4581 <--	20040929

ED Entered STN: 22 Aug 2007

AB In a process of coloring surfaces of metals via the sol-gel method, which involves the application of a sol-gel solution onto the metal substrate surface (by immersion, i.e. dip coating, jet spraying, spray coating, painting, application of rolls, substrate turning, etc.) with a subsequent heat treatment, the preparation of the solution of the sol -gel coating comprises the following stages: (a) preparation of a homogeneous solution 1 consisted a solvent and an additive at the solvent/additive molar ratio varied within the 0.01-500 range; (b) addition of a transition metal alkoxide to the above solution 1 under humidity-free neutral atmospheric, preferably in presence of dry nitrogen (>99%), thereby obtaining the solution 2; (c) addition of water and acid to the solution 2 at the acid/water molar ratio within the 0-100 range; (d) maintaining the solution 2 under vigorous agitation while adding the solution 3 prepared in the previous stage, finally obtaining the sol-gel solution to be used for coating of the metal surfaces; and (e) heating the product prepared in the previous stage within the 20-1330° range for the periods of fractions of seconds for a week in the manner to enable obtaining all the colors of the visible light spectrum. In the composites constituting the colored coating prepared by the sol-gel method and the metal substrate, the coating comprises at least one type of mol. capable of presenting at least one type of electronic transition through absorption of photons in the region of the electromagnetic spectrum corresponding to the visible one (approx. within the 380-780 nm range).

IC ICM B05D005-06
ICS B05D003-02; B05D007-14

CC 56-6 (Nonferrous Metals and Alloys)

ST metal surface coloring sol
gel method

IT Transition metal compounds
(alkoxides, in sol-gel solution preparation; process of

coloring metal surfaces via sol
-gel method, formed composites and use)
IT Optical absorption
(bands; process of coloring metal
surfaces via sol-gel method and formed
composites in relation to)
IT Sol-gel processing
(coating; process of coloring metal
surfaces via sol-gel method, formed
composites and use)
IT Coating materials
(colored; process of coloring metal
surfaces via sol-gel method, formed
composites and use)
IT Coating process
(dip, sol-gel coating application by;
process of coloring metal surfaces
via sol-gel method, formed composites and use)
IT Agitation (mechanical)
Heating
Solvents
(in sol-gel solution preparation; process of
coloring metal surfaces via sol
-gel method, formed composites and use)
IT Acids, uses
(in sol-gel solution preparation; process of
coloring metal surfaces via sol
-gel method, formed composites and use)
IT Coating process
(painting, sol-gel coating
application by; process of coloring metal
surfaces via sol-gel method, formed
composites and use)
IT Electronic transition
(process of coloring metal surfaces
via sol-gel method and formed composites in
relation to)
IT Color
Coloring
Heat treatment
(process of coloring metal surfaces
via sol-gel method, formed composites and use)
IT Metals, processes
(process of coloring metal surfaces
via sol-gel method, formed composites and use)
IT Rolls
(sol-gel coating application by;
process of coloring metal surfaces
via sol-gel method, formed composites and use)
IT Coating process
(sol-gel; process of coloring
metal surfaces via sol-gel
method, formed composites and use)
IT Coating process
(spray, sol-gel coating application
by; process of coloring metal surfaces
via sol-gel method, formed composites and use)
IT Jets
(spraying, sol-gel coating
application by; process of coloring metal

surfaces via sol-gel method, formed
composites and use)

IT Pickling
(steel surface; process of coloring
metal surfaces via sol-gel
method, formed composites and use)

IT Rotation
(substrate, sol-gel coating
application by; process of coloring metal
surfaces via sol-gel method, formed
composites and use)

IT Metal alkoxides
(transition metal, in sol-gel solution
preparation; process of coloring metal
surfaces via sol-gel method, formed
composites and use)

IT 7727-37-9, Nitrogen, uses
(dry, neutral atmospheric containing, in sol-gel solution
preparation; process of coloring metal
surfaces via sol-gel method, formed
composites and use)

IT 546-68-9, Titanium tetraisopropoxide
(hydrolysis of, sol-gel coating solution
prepared by; process of coloring metal
surfaces via sol-gel method, formed
composites and use)

IT 64-17-5, Ethanol, reactions
(in hydrolysis of Ti tetraisopropoxide, for sol-
gel coating solution preparation; process of
coloring metal surfaces via sol
-gel method, formed composites and use)

IT 7732-18-5, Water, uses
(in sol-gel solution preparation; process of
coloring metal surfaces via sol
-gel method, formed composites and use)

IT 11134-23-9
(process of coloring metal surfaces
via sol-gel method, formed composites and use)

IT 64-19-7, Acetic acid, reactions 111-42-2, Diethanolamine, reactions
(process of coloring metal surfaces
via sol-gel method, formed composites and use)

L134 ANSWER 12 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:	2004:619791 HCAPLUS Full-text
DOCUMENT NUMBER:	142:204468
TITLE:	Effect of the type of sublayer on the corrosion resistance of titanium alloy-hydroxylapatite (HAp) systems intended for durable implants for medical use
AUTHOR(S):	Michalik, Rafal
CORPORATE SOURCE:	Katedra Nauki o Mater., Wydz. Inz. Mater., Metal. i Transportu, Politech. Slaska, Katowice, 40-019, Pol.
SOURCE:	Materialy Ceramiczne (2004), 56(2), 61-65 CODEN: MCAECQ
PUBLISHER:	Wydawnictwo Naukowe AKAPIT
DOCUMENT TYPE:	Journal
LANGUAGE:	Polish

ED Entered STN: 04 Aug 2004

AB The paper presents some test results on the effect of Hap protective coatings formed by sol-gel method upon corrosion resistance of tech. titanium. The samples with amorphous and crystalline coatings, with SiO2 and TiO2 subcoatings as well as without any have been tested. Coatings with amorphous structure embody better properties. The presence of oxide film applied upon the metal surface before the Hap coatings is formed strongly influences the usability properties of the material.

CC 63-7 (Pharmaceuticals)

ST corrosion resistance titanium implant hydroxyapatite coating

IT Prosthetic materials and Prosthetics
(implants; effects of hydroxyapatite coating on corrosion resistance of titanium alloy)

IT Corrosion
(resistance; effects of hydroxyapatite coating on corrosion resistance of titanium alloy)

IT 1306-06-5, Hydroxyapatite 12743-70-3, Ti6al4v
(effects of hydroxyapatite coating on corrosion resistance of titanium alloy)

L134 ANSWER 13 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:502958 HCAPLUS Full-text
DOCUMENT NUMBER: 141:365334
TITLE: Effect of processing and storage methods on the shelf life and incidence of insect pests on smoked fish
AUTHOR(S): Ashamo, M. O.; Ajayi, O. E.
CORPORATE SOURCE: Department of Biology, Federal University of Technology, Akure, Nigeria
SOURCE: Global Journal of Pure and Applied Sciences (2003), 9(3), 319-324
CODEN: GJPSFR; ISSN: 1118-0579
PUBLISHER: Global Journal of Pure and Applied Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 22 Jun 2004

AB The effect of processing and storage methods on the shelf life and incidence of insect pests on stored smoked fish was carried out on 2 types of fishes, Tilapia sp and Clarias sp. Two samples were used, one sample of already smoked Clarias obtained from Oba's market, Akure. The other sample (Tilapia and Clarias) obtained fresh and hygienically smoked instantly in the laboratory These samples were packed in different packaging materials; polythene, aluminum foil, plastic container, and carton and stored at low (refrigeration) and ambient temps. For the period of 90 days of storage, the sample that was processed in the laboratory did not show any pest infestation, while the already smoked fish obtained from the market showed infestation with Dermestes after 10 days of storage for all the packaging materials. Low temperature storage proved to be the best storage techniques for all the packaging materials. The samples stored in carton at the ambient temperature were better than those of other materials.

CC 17-4 (Food and Feed Chemistry)

IT Containers
(cartons; processing and storage effects on shelf life and incidence of insect pests on smoked fish)

IT Clarias
Color
Containers
Flavor
Food packaging
Food packaging materials
Food processing

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     Food texture
     Refrigeration
     Temperature effects, biological
     Tilapia
        (processing and storage effects on shelf life and incidence of
        insect pests on smoked fish)
REFERENCE COUNT:         11    THERE ARE 11 CITED REFERENCES AVAILABLE FOR
                               THIS RECORD. ALL CITATIONS AVAILABLE IN THE
                               RE FORMAT

L134 ANSWER 14 OF 76  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:        2002:564685  HCAPLUS  Full-text
DOCUMENT NUMBER:         137:251104
TITLE:                   Factors influencing durability of sol-
                         gel surface treatments in
                         metal bonded structures
AUTHOR(S):               Blohowiak, Kay Y.; Cadwell-Stancin, Linda;
                         Anderson, Robert A.; Mazzitelli, Carolyn; Preedy,
                         Kristina; Grob, Jacob W.; Glidden, Mike
CORPORATE SOURCE:        The Boeing Company, Seattle, WA, 98124-2499, USA
SOURCE:                  International SAMPE Symposium and Exhibition (
                         2002), 47(Affordable Materials Technology:
                         Platform to Global Value and Performance, Book 2),
                         279-291
                         CODEN: ISSEEG; ISSN: 0891-0138
PUBLISHER:               Society for the Advancement of Material and
                         Process Engineering
DOCUMENT TYPE:           Journal
LANGUAGE:                English
ED   Entered STN:  30 Jul 2002
AB    This project focuses on the development and optimization of user-friendly sol-
      gel methods for preparing metal surfaces for bonding with 121° (250 F)-cure
      and 177° (350 F)-cure epoxy adhesives.  Work was conducted to improve the
      process robustness of sol- gel surface treatments for repair applications when
      used in conjunction with readily available mech. deoxidn. techniques. The sol-
      gel formulation used in this study was Boegel-EPII (com. sold as AC Tech AC-
      130).  During testing with various abrasion-based deoxidn. methods,
      differences in performance of the bonded specimens were observed during
      hot/wet exposure of the sol-gel prepared specimens.  To delineate the cause of
      the performance differences, systematic studies were carried out on bare
      aluminum 2024-T3 alloy to examine the effects of the use of different abrasive
      papers and pads, and the application of these materials using various power-
      assisted tools.  Bond strength performance, durability, and surface anal.
      studies were performed to get a complete picture of the system.  The results
      of these studies identify specific materials and processing parameters
      required to yield a robust sol-gel application process and generate a better
      understanding of the durability performance of these bonded systems.
CC   56-9 (Nonferrous Metals and Alloys)
ST   factor durability sol gel surface
     treatment metal bonded structure
IT   Surface roughness
        (adhesion in relation to; factors influencing durability of
        sol-gel surface treatments in
        metal adhesive bonded structures)
IT   Joints, mechanical
        (adhesive; factors influencing durability of sol-
        gel surface treatments in metal
        adhesive bonded structures)
IT   Epoxy resins, processes
        (adhesives; factors influencing durability of sol-
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gel surface treatments in metal
adhesive bonded structures)
IT Sol-gel processing
(coating; factors influencing durability of sol
-gel surface treatments in metal
adhesive bonded structures)
IT Adhesives
(epoxy; factors influencing durability of sol-gel
surface treatments in metal adhesive bonded
structures)
IT Adhesion, physical
(factors influencing durability of sol-gel
surface treatments in metal adhesive bonded
structures)
IT Coating process
(sol-gel; factors influencing durability of
sol-gel surface treatments in
metal adhesive bonded structures)
IT 12616-84-1, Aa2024
(factors influencing durability of sol-gel
surface treatments in metal adhesive bonded
structures)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L134 ANSWER 15 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:254774 HCAPLUS Full-text
DOCUMENT NUMBER: 134:270079
TITLE: Glass having antibacterial surface layer and their
manufacture
INVENTOR(S): Kokubo, Tadashi; Kawashita, Shoichi; Masuda,
Noriaki; Shibuya, Takehiro
PATENT ASSIGNEE(S): Nippon Electric Glass Co., Ltd., Japan; Ion Kogaku
Shinko Zaidan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001097735	A	20010410	JP 1999-281094 <--	19991001
PRIORITY APPLN. INFO.:			JP 1999-281094 <--	19991001

ED Entered STN: 11 Apr 2001
AB The glass comprises a surface layer containing antibacterial metal ion and a support free of the antibacterial metal ion. The surface layer may be SiO2-MxOy (M = metals having valence lower than the coordination number, e.g. Al) glass containing antibacterial metal ions. The glass is manufactured by mixing of hydrolyzable organic Si compound, hydrolyzable metal (M) compound which its valence is lower than the coordination number when oxidized, antibacterial metal salt, alkaline catalyst, and water. The glass may be manufactured by 2-step mixing, 1st mixing of a certain amount of organic Si compound, alkaline catalyst, and water and secondary addition of the rest of the organic Si compound, a metal compound, and an antibacterial metal salt.

The glass is colorless and is suitable for antibacterial treatment of fibers, building materials, plastics, coatings, water, etc.

IC ICM C03C004-00
ICS A01N025-00; A01N059-16; C02F001-50; C03C012-00
CC 57-1 (Ceramics)
Section cross-reference(s): 5
ST antibacterial silver contg colorless glass; sol gel manuf antibacterial glass; silica alumina glass silver contg antibacterial
IT Antibacterial agents
Sol-gel processing
(sol-gel manufacture of glass with antibacterial surface layer)
IT Aluminosilicate glasses
(sol-gel manufacture of glass with antibacterial surface layer)
IT 7440-22-4P, Silver, preparation
(sol-gel manufacture of glass with antibacterial surface layer)
IT 1344-28-1P, Alumina, preparation 7631-86-9P, Silica, preparation
(sol-gel manufacture of glass with antibacterial surface layer)

L134 ANSWER 16 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:844226 HCAPLUS Full-text
DOCUMENT NUMBER: 134:7624
TITLE: Novel techniques of surface modification and processing based on anodizing of aluminum for the creation of functional surface
AUTHOR(S): Takahashi, Hideaki; Sakairi, Masatoshi; Chu, S. Z.; Watanabe, Keiji; Kikuchi, Tatsuya; Miwa, Koji; Kato, Zenta; Jonishi, Sanae
CORPORATE SOURCE: Grad. Sch. Eng., Hokkaido Univ., Kita-13, Nishi-8, Kita-ku, Sapporo-shi, Hokkaido, 060-8628, Japan
SOURCE: Keikinzoku (2000), 50(11), 544-551
CODEN: KEIKA6; ISSN: 0451-5994
PUBLISHER: Keikinzoku Gakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
ED Entered STN: 05 Dec 2000
AB A review with 29 refs. on surface modification and processing of anodized Al specimens by irradiating with laser beam in various acidic solns. and subsequently plating or coating with organic compds., patterning with atomic force microscopy (AFM) probes, or coating with composite metal oxides by sol-gel to give functional surfaces and metal-organic CVD (MOCVD).
CC 56-0 (Nonferrous Metals and Alloys)
ST review anodized aluminum laser beam irradn functional surface ; laser ablation anodized aluminum functional surface review
IT Coating process
(electroless; in surface modification and processing of anodized Al for making functional surfaces)
IT Electrodeposition
Laser ablation
(in surface modification and processing of anodized Al for making functional surfaces)
IT Vapor deposition process
(metalorg.; in surface modification and processing of anodized Al for making functional surfaces)
IT Sol-gel processing

(mixed oxide coating formation; in surface
modification and processing of anodized Al for making functional
surfaces)

IT Coating materials
(organic; in surface modification and processing of anodized
Al for making functional surfaces)

IT Atomic force microscopy
(probes, patterning with; in surface modification and
processing of anodized Al for making functional surfaces)

IT 7429-90-5, Aluminum, processes
(surface modification and processing of anodized Al for
making functional surfaces)

L134 ANSWER 17 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:595273 HCAPLUS Full-text

DOCUMENT NUMBER: 132:121759

TITLE: Influence of the liquid or gaseous nature of the grape environment on rheological properties and on color and nitrogen extractabilities during conditions simulating Beaujolais winemaking

AUTHOR(S): Abbal, Ph.; Sarris, J.; Pradal, Martine; Berger, J.-L.; Robin, J.-P.

CORPORATE SOURCE: Unite de Recherche de Biochimie Metabolique et Technologie, Institut des Produits de la Vigne, INRA, Montpellier, 34060, Fr.

SOURCE: Journal International des Sciences de la Vigne et du Vin (1999), 33(2), 87-98
CODEN: JISVE8; ISSN: 1151-0285

PUBLISHER: Vigne et Vin Publications Internationales

DOCUMENT TYPE: Journal

LANGUAGE: French

ED Entered STN: 21 Sep 1999

AB Physicochem. characteristics of grape berries were monitored during conditions simulating Beaujolais winemaking. In this process, a large number of intact berries is kept in a CO_2 atmosphere which is produced by ethanolic fermentation of the must in the bottom of the tank. To simulate this, two equivalent samples of ripe Gamay or Carignane berries were placed in the same jar and subjected to carbonic anaerobiosis. One sample was maintained in the gaseous atmospheric and the other submerged in the liquid which was either an aqueous solution of 6% ethanol (volume/volume), the same solution with 1 M sorbitol, or grape must obtained from crushed berries. The aim of these expts. was to study, in both submerged and non-submerged samples, the effects of ethanol on rheol. properties of berries and on potential extractabilities of color and soluble nitrogen from skin and berry flesh. Whatever the model, ethanol had a deleterious effect on berries, especially on those which were immersed. For those, the development of anaerobic metabolism was drastically reduced, but nitrogeneous and pigment extractabilities were significantly increased. The anthocyanins and their copigments were preferentially extracted when berries were immersed. The rheol. properties were related to the osmotic strength of the submerging liquid It was assumed that hydration or dehydration phenomena of cell-wall polysaccharides could explained the differences observed in the rheol. behavior of berries and, in particular, modifications of skin elasticity.

CC 17-13 (Food and Feed Chemistry)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L134 ANSWER 18 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:45463 HCAPLUS Full-text

DOCUMENT NUMBER: 132:170675
TITLE: Surface-enhanced Raman sensor for trace chemical detection in water
AUTHOR(S): Lee, Yuan-Hsiang; Farquharson, Stuart; Rainey, Petrie M.
CORPORATE SOURCE: Advanced Fuel Research, East Hartford, CT, 06108, USA
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1999), 3857(Chemical Microsensors and Applications II), 76-84
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 19 Jan 2000
AB Surface-enhanced Raman spectroscopy (SERS) promises to be a most sensitive method for chemical detection; recently, SERS has been used for chemical, biochem., environmental, and physiol. applications. A variety of methods using various media (electrodes, colloids, substrates) were successfully developed to enhance Raman signals by ≥6 orders of magnitude; however, SERS has not become a routine anal. technique because these methods are unable to provide quant. measurements. This is largely due to the inability to fabricate a sampling medium that provides reversible chemical adsorption, anal.-to-anal. reproducibility, unrestricted solution requirements (reagent concentration and pH), or sample phase (liquid or solid). To overcome these restrictions, metal-doped sol- gels were developed to provide surface-enhancement of Raman scattering. The porous SiO2 network offers a unique environment for stabilizing SER active metal particles and a high surface area for increasing interactions between the analyte and metal particles. This eliminates the need to concentrate the analyte on the surface by evaporating the solvent. The sol-gel is easily coated on a variety of surfaces (fiber optics, glass slides, glass tubing), and can be designed into sample flow systems. Development of Ag-doped sol-gels used to coat the inside walls of glass sample vials and flow tubes for trace chemical detection in water is discussed. Performance of metal -doped, sol-gels was evaluated using p-aminobenozic acid, pharmaceuticals, and other organic and inorg. compds. Applications to environmental and physiol. trace chemical anal. are also discussed.
CC 61-3 (Water)
Section cross-reference(s): 47, 63, 79, 80
ST surface enhanced Raman spectroscopy sensor chem detn water; metal doped sol gel surface enhancement Raman scattering; aminobenzoic acid detn water Raman spectroscopy
IT Sol-gel processing
(coating; metal-doped, sol-gel, surface-enhanced Raman spectroscopy sensor for trace chemical determination in water)
IT Raman spectroscopy
(metal-doped, sol-gel, surface-enhanced; metal-doped, sol-gel, surface-enhanced Raman spectroscopy sensor for trace chemical determination in water)
IT Coating process
(sol-gel; metal-doped, sol-gel, surface-enhanced Raman spectroscopy sensor for trace chemical determination in water)
IT 7732-18-5, Water, analysis

(metal-doped, sol-gel,
surface-enhanced Raman spectroscopy sensor for trace chemical
determination in water)

IT 50-21-5, Lactic acid, analysis 57-12-5, Cyanide, analysis 57-44-3,
Barbital 60-27-5, Creatinine 87-00-3 150-13-0, p-Aminobenzoic
acid
(metal-doped, sol-gel,
surface-enhanced Raman spectroscopy sensor for trace chemical
determination in water)

IT 67-56-1, Methanol, uses 681-84-5, Tetramethylorthosilicate
16972-61-5
(sol-gel; metal-doped, sol-
gel, surface-enhanced Raman spectroscopy sensor
for trace chemical determination in water)

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L134 ANSWER 19 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:453600 HCAPLUS Full-text

DOCUMENT NUMBER: 127:112228

TITLE: Silver nanocluster formation in silica
coatings by the sol-gel
route

AUTHOR(S): Armelao, Lidia; Bertoncello, Renzo; De Dominicis,
Mattia

CORPORATE SOURCE: Centro Studio Stabilita Reattivita Composti
Coordinazione, Consiglio Nazionale Ricerche,
Padua, I-35131, Italy

SOURCE: Advanced Materials (Weinheim, Germany) (
1997), 9(9), 736-741
CODEN: ADVMEW; ISSN: 0935-9648

PUBLISHER: Wiley-VCH

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 19 Jul 1997

AB The sol-gel synthesis of Ag-nanocluster-doped silica coatings is described,
which leads to samples containing only Ag cations. Subsequent thermal
treatments cause these to evolve into metal Ag particles with spherical shape,
narrow size distribution, and homogeneous dispersion. The size, distribution,
and stability of the Ag clusters can be controlled by the choice of precursor
compds. and subsequent thermal treatments. A hypothesis is put forward to
explain the cluster formation and observes heat-dependent color-change.

CC 57-2 (Ceramics)

ST sol gel silver nanocluster silica coating
; heat treatment silver nanocluster formation coating

IT Sol-gel processing
(coating; silver nanocluster formation in silica
coatings by sol-gel route)

IT Clusters
(silver nanocluster formation in silica coatings by
sol-gel route)

IT Heat treatment
(silver nanocluster formation in silica coatings by
sol-gel route due to)

IT Coating process
(sol-gel; silver nanocluster formation in
silica coatings by sol-gel route)

IT 7631-86-9, Silica, uses
(coatings; silver nanocluster formation in silica

coatings by sol-gel route)

IT 7440-22-4, Silver, uses
(silver nanocluster formation in silica coatings by sol-gel route)

IT 7631-86-9, Silica, processes
(silver nanocluster formation in silica coatings by sol-gel route)

L134 ANSWER 20 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:424385 HCAPLUS Full-text

DOCUMENT NUMBER: 127:184941

TITLE: Sol-gel entrapped materials for optical sensing of solvents and metal ions

AUTHOR(S): Wallington, Sally-Ann; Labayen, Telmo; Poppe, Andrea; Sommerdijk, Nico A. J. M.; Wright, John D.

CORPORATE SOURCE: Centre for Materials Research, Department of Chemistry, University of Kent, Canterbury Kent, CT2 7NH, UK

SOURCE: Sensors and Actuators, B: Chemical (1997), B38(1-3), 48-52
CODEN: SABCEB; ISSN: 0925-4005

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 09 Jul 1997

AB The preparation and characterization of sol-gel composites for fluorescent detection of solvents (using dansyl-labeled β-cyclodextrin) and Al^{3+} ions (using Morin), and for colorimetric detection of Cu^{2+} (using Eriochrome Cyanine R) is described. The active roles played by both the entrapped reagent and the sol-gel matrix in the sensing processes are discussed.

CC 79-3 (Inorganic Analytical Chemistry)
Section cross-reference(s): 80

IT Colorimetry
Fluorometry
Solvents
(sol-gel entrapped materials for optical sensing of solvents and metal ions)

IT Sol-gel processing
(sol-gel entrapped reagents for optical sensing of solvents and metal ions)

IT Reagents
(sol-gel entrapped reagents for optical sensing of solvents and metal ions)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L134 ANSWER 21 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:214815 HCAPLUS Full-text

DOCUMENT NUMBER: 128:275594

TITLE: Chemical surface modification method of metal oxide (ultra)fine particles

AUTHOR(S): Yoshioka, Ken; Fukazawa, Yoshiyuki

CORPORATE SOURCE: Jt. Res. Div., Kanagawa Ind. Technol. Res. Inst., Ebina, 243-0435, Japan

SOURCE: Kenkyu Hokoku - Kanagawa-ken Sangyo Gijutsu Sogo Kenkyusho (1997), 3, 37-40
CODEN: KGSKF7; ISSN: 1341-6529

PUBLISHER: Kanagawa-ken Sangyo Gijutsu Sogo Kenkyusho

DOCUMENT TYPE: Journal

LANGUAGE: Japanese
ED Entered STN: 16 Apr 1998
AB A new chemical surface modification method of metal oxide (ultra)fine particles was studied. The method used both super acidification and surface topochem. sol- gel reaction. As a result, surface-modified samples had stronger acidic sites different from those of both coated and coating materials. This means that there is a possibility of them having a new function because of new stronger acid sites.
CC 66-6 (Surface Chemistry and Colloids)
Section cross-reference(s): 78
ST surface coating metal oxide particle
IT Coating materials
Particles
Surface
(chemical surface modification method of metal oxide (ultra)fine particle)
IT Oxides (inorganic), properties
(chemical surface modification method of metal oxide (ultra)fine particle)
IT Sol-gel processing
(coating; chemical surface modification method of metal oxide (ultra)fine particle)
IT Coating process
(sol-gel; chemical surface modification method of metal oxide (ultra)fine particle)
IT 1344-28-1, Alumina, properties 13463-67-7, Titania, properties
(chemical surface modification method of metal oxide (ultra)fine particle)

L134 ANSWER 22 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:698465 HCAPLUS Full-text
DOCUMENT NUMBER: 123:120020
TITLE: The effect of deposited rare earth oxide films on high temperature corrosion behavior of different metals and alloys
AUTHOR(S): Colson, J. C.; Buscail, H.; Bonnet, G.; Lachkar, M.; Larpin, J. P.
CORPORATE SOURCE: LRRS, Fac. Sci. Mirande, Dijon, F-21004, Fr.
SOURCE: Diffusion and Defect Data--Solid State Data, Pt. B: Solid State Phenomena (1995), 41(Diffusion and Reactions), 165-76
CODEN: DDBPE8; ISSN: 1012-0394
PUBLISHER: Scitec Publications
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 25 Jul 1995
AB The Rare Earth beneficial effect on the high temperature oxidation of steel is now well established. In this paper different methods for deposition of Rare Earths on the surface of Metal and steels are proposed (Sol/Gel, electrophoresis in aqueous or organic medium, MOCVD). High Temperature oxidation tests were performed with iron, AlSi 304, F17Ti stainless steels and Fe-Mn-Al alloys with minor silicon concentration, either in air or in pure oxygen (under isothermic or thermal cycling conditions). The isothermal corrosion tests for coated or non-coated samples revealed an identical oxidation process, but rate consts. significantly decreased for coated samples. In thermal cyclic conditions, scale spallation completely disappeared for coated samples even after many cycles. However, with Fe-Mn-Al, an opposite result is obtained when a minor concentration of silicon is present in the alloy. The Rare earth effect is also noticed to be more marked with elements located on the left part of the lanthanide period. Different

explanations for these results could be proposed: increase of the plastic deformation capacity of the Rare Earth containing oxide scale, interfacial cationic sites-blocking by Rare Earth, modification of the process of matter transport during the growth of the protective oxide scale (cationic diffusion for non- coated steel and anionic for deposited surface). This last process probably increases the protective oxide scale adherence. It is potentially an interesting process usable in different high temperature corrosion areas.

CC 56-10 (Nonferrous Metals and Alloys)

ST metal corrosion rare earth oxide film; steel corrosion rare earth oxide film

IT Coating materials
Corrosion
(effect of deposited rare earth oxide films on high temperature corrosion behavior of different metals and alloys)

IT Rare earth oxides
(effect of deposited rare earth oxide films on high temperature corrosion behavior of different metals and alloys)

IT 7439-89-6, Iron, properties 11109-50-5, AISI 304 12743-03-2, F17Ti 166105-30-2 166105-31-3 166105-32-4
(effect of deposited rare earth oxide films on high temperature corrosion behavior of different metals and alloys)

L134 ANSWER 23 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:670369 HCAPLUS Full-text
DOCUMENT NUMBER: 123:93199
TITLE: Thin sol-gel-derived silica-coatings on CP-titania and bioactivity thereupon
AUTHOR(S): Nordstrom, E. G.; Sodergard, B. E.; Kukkonen, L.
CORPORATE SOURCE: Laboratory Inorganic Chemistry, Abo Akademi University, Turku, SF-20500, Finland
SOURCE: Bio-Medical Materials and Engineering (1994), 4(3), 187-92
CODEN: BMENEO; ISSN: 0959-2989
PUBLISHER: IOS Press
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 13 Jul 1995

AB Silica-coatings prepared by sol-gel method was coated on CP-titania cones and disks. Thin coatings of less than approx. 0.3 μm were produced. The greatest advantage with the Si-gel coatings is that the densification of the gel takes place at already 500°C, thus not changing the character of the metal surface. The coatings showed to passivate the surface of the CP-titania specimen, provided that the thickness did not exceed 0.3 μm. That seemed to be the critical thickness for a smooth and intact coating. Thicker coatings of Si-gel scales easily off.

CC 63-7 (Pharmaceuticals)

ST sol gel coating titania silica

IT Coating process
(sol-gel, thin sol-gel -derived silica-coatings on CP-titania and bioactivity thereupon)

IT 7631-86-9, Silica, biological studies 13463-67-7, Titania, biological studies
(thin sol-gel-derived silica-coatings on CP-titania and bioactivity thereupon)

L134 ANSWER 24 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:309752 HCAPLUS Full-text
DOCUMENT NUMBER: 122:89320

TITLE: Formation of phosphate coatings on metal implants from natural and synthetic body fluid
AUTHOR(S): Stoch, Anna; Brozek, Alicja; Jastrzebski, Witold; Bolek, Anna; Sasiadek, Urszula
CORPORATE SOURCE: Department of Materials Science and Ceramics, University of Mining and Metallurgy, Krakow, 30-059, Pol.
SOURCE: Prace Komisji Nauk Ceramicznych, Ceramika (Polska Akademia Nauk) (1993), 43(Special Glasses and Amorphous Materials), 163-71
CODEN: PKNCE6; ISSN: 0860-3340
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 24 Jan 1995
AB Calcium phosphate coatings were obtained on metal supports used in surgery or dentistry as implants, i.e., Mikromed (Cr-Co-Mo alloy), stainless steel (Fe-Cr-Ni) or titanium WT-1-0. Prior to deposition, the samples were covered with silica sol-gel film and then soaked in natural or synthetic body fluid at 37°. Silica favors the phosphate precipitation on metal surfaces. Coatings were examined by FTIR spectroscopy, XRD and SEM anal.
CC 63-7 (Pharmaceuticals)
ST phosphate coating metal implant body fluid; calcium phosphate coating implant body fluid; dental implant phosphate coating body fluid; surgical implant phosphate coating body fluid
IT Glass, oxide
(coating; calcium phosphate coating on metal implants from natural and synthetic body fluid)
IT Dental materials and appliances
Prosthetic materials and Prosthetics
(implants, calcium phosphate coating on metal implants from natural and synthetic body fluid)
IT 1306-06-5, Hydroxylapatite 7758-87-4, Calcium phosphate
(calcium phosphate coating on metal implants from natural and synthetic body fluid)
IT 7440-32-6, Titanium, biological studies 12597-68-1, Stainless steel, biological studies 56847-64-4
(calcium phosphate coating on metal implants from natural and synthetic body fluid)
IT 1305-78-8, Calcium oxide, biological studies 1313-59-3, Sodium oxide, biological studies 1314-56-3, Phosphorus pentoxide, biological studies 7631-86-9, Silica, biological studies
(glass; calcium phosphate coating on metal implants from natural and synthetic body fluid)

L134 ANSWER 25 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:646373 HCAPLUS Full-text
DOCUMENT NUMBER: 117:246373
TITLE: Oligonucleotide DNA fingerprinting detects a multiallelic focus in box elder (Acer negundo)
AUTHOR(S): Nybom, H.; Ramser, J.; Kaemmer, D.; Kahl, G.; Weising, K.
CORPORATE SOURCE: Dep. Hortic. Plant Breed., Swed. Univ. Agric. Sci., Kristianstad, S-291 94, Swed.
SOURCE: Molecular Ecology (1992), 1(1), 65-7
CODEN: MOECEO; ISSN: 0962-1083
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 26 Dec 1992

AB Leaves were collected from 36 individual plants of box elder from Colorado, Illinois, and Kansas. Total DNA was extracted from leaves, 7-μg samples digested with 35 units each of HinfI, electrophoresed and Southern blotted. The samples were divided onto two different gels. On each gel one of the samples was loaded in two or three lanes, resp., to provide an internal size standard Hybridization with the 32P-end-labeled (GATA)4 probe, washing and autoradiog. were carried out. These results show (GATA)4 repeats to be present and polymorphic in box elder thus supporting the idea of the ubiquitous appearance of simple sequence repeats in plant genomes. A number of well-resolved large-sized fragments hybridized strongly to the (GATA)4 probe and can be scored easily. These fragments fall into two size categories: 9-10-kb and 5-6-kb, resp. Of the 36 plants studied, 17 have two of these large and distinctive fragments whereas another two plants have four large fragments and the remaining 17 plants have none. Looking at all individuals in the study, a total of five different fragment sizes are found in the 9-10-kb size category as well as in the 5-6-kb category. The distribution of these fragments follows a certain pattern: those plants that have two fragments always have one in the smaller category and one in the larger. The two plants that have four fragments instead have two in the smaller category and two in the larger. Moreover, the fragments belonging to the different size categories do not occur independently in the different plants. Instead there is a perfect fit in relative fragment size with a constant size difference between the two fragments in each plant. This is also true for plants carrying four fragments: two fragments each can be paired off at a distance of approx. 4-kb.

CC 3-3 (Biochemical Genetics)
Section cross-reference(s): 11

IT Genetic polymorphism
(oligonucleotide repeat, in box elder)

IT Genetic methods
(DNA fingerprinting, oligonucleotide, multiallelic focus detection by, in box elder)

L134 ANSWER 26 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1990:202086 HCAPLUS Full-text
DOCUMENT NUMBER: 112:202086
ORIGINAL REFERENCE NO.: 112:34115a,34118a
TITLE: Photoelectrochemical cells and their manufacture
PATENT ASSIGNEE(S): Sulzer, Gebr., A.-G., Switz.
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 01220380	A	19890904	JP 1988-90153 <--		19880412
CH 674596	A5	19900615	CH 1988-505 <--		19880212
US 4927721	A	19900522	US 1988-255052 <--		19881007
US 5084365	A	19920128	US 1990-475023 <--		19900205
PRIORITY APPLN. INFO.:			CH 1988-505 <--	A	19880212
			US 1988-255052	A3	19881007

<--

ED Entered STN: 26 May 1990

AB The cells of a high conversion efficiency have a polycryst. metal oxide semiconductor covered with a continuous colorant layer on the most part of its surface, where the semiconductor has a surface roughness coefficient >150. The oxide can be oxide of Group IVB-VIB (especially Ti, Zr, Hf) metals, Sr, Zn, In, Y, La, V, Nb, Ta, Cr, Mo, or W perovskite-type double oxide and/or their mixture; and the colorant can be transition metal complexes or (metal-containing) phthalocyanine or porphyrin, and may contain carboxylic acid ligands. The semiconductor for the cell is prepared by hydrolysis of a metal alcoholate in an atmospheric of 30-80% relative humidity through a sol- gel process.

IC ICM H01M014-00
ICS H01L031-04

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST photoelectrochem cell electrode surface roughness; metal oxide photoelectrochem cell electrode; transition metal complex photoelectrochem electrode; phthalocyanine metal oxide photoelectrochem electrode; porphyrin metal oxide photoelectrochem electrode

IT Bromides, uses and miscellaneous
Iodides, uses and miscellaneous
(electrolytes containing, for photoelectrochem. cells with colorant-coated metal oxide semiconductor electrodes)

IT Electrodes
(photoelectrochem., metal oxide, surface roughness and manufacture of)

IT 101-60-0, Porphyrin 574-93-6, Phthalocyanine 574-93-6D, Phthalocyanine, metal complexes 7440-04-2D, Osmium, complexes 7440-18-8D, Ruthenium, complexes 126871-98-5
(electrodes coated with, metal oxide, for photoelectrochem. cells)

IT 12049-50-2, Calcium titanate ($CaTiO_3$) 12060-59-2, Strontium titanate ($SrTiO_3$)
(electrodes from colorant-coated perovskite, with high surface roughness, for photoelectrochem. cells)

IT 1312-43-2, Indium oxide 1312-81-8, Lanthanum oxide (La_2O_3) 1314-11-0, Strontium oxide, uses and miscellaneous 1314-13-2, Zinc oxide, uses and miscellaneous 1314-23-4, Zirconia, uses and miscellaneous 1314-35-8, Tungsten oxide 1314-36-9, Yttria, uses and miscellaneous 1332-37-2, Iron oxide, uses and miscellaneous 11098-99-0, Molybdenum oxide 11099-02-8, Nickel oxide 11099-11-9, Vanadium oxide 11113-88-5, Silver oxide 11118-57-3, Chromium oxide 12055-23-1, Hafnia 12627-00-8, Niobium oxide 13463-67-7, Titania, uses and miscellaneous 59763-75-6, Tantalum oxide
(electrodes from colorant-coated, with high surface roughness, for photoelectrochem. cells)

IT 123-31-9, 1,4-Benzenediol, uses and miscellaneous
(electrolytes containing, for photoelectrochem. cells with colorant-coated metal oxide semiconductor electrodes)

L134 ANSWER 27 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1990:73090 HCAPLUS Full-text
DOCUMENT NUMBER: 112:73090
ORIGINAL REFERENCE NO.: 112:12415a,12418a
TITLE: Ultrathin (1 nm) vertically shadowed platinum-carbon replicas for imaging individual molecules in freeze-etched biological DNA and

material science metal and plastic specimens
AUTHOR(S): Ruben, George C.
CORPORATE SOURCE: Dep. Biol. Sci., Dartmouth Coll., Hanover, NH, 03755, USA
SOURCE: Journal of Electron Microscopy Technique (1989), 13(4), 335-54
CODEN: JEMTEC; ISSN: 0741-0581
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 03 Mar 1990
AB Single mol. resolution in beam-sensitive, uncoated, noncryst. materials has heretofore not been possible except in thin (≤150 Å) Pt-C replicas, which are resistant to electron beam destruction. Previously, the granularity of metal film replicas limited their resolution to ≥20 Å. This paper demonstrates that Pt-C film granularity and resolution are a function of the method of replication and other controllable factors. Low-angle 20° rotary, 45° unidirectional, and vertical 9.7 Å Pt-C films deposited on mica under the same conditions were compared. Vertical replication had a 5 Å granularity, the highest resolution, and evenly coated the whole surface. A 45° replication had a 9.5 Å granularity, a slightly poorer resolution, and a discontinuous surface coating. The use of 20° rotary replication proved to be unsuitable for high-resolution imaging, with 20-25 Å granularity and resolution 2-3-fold poorer. Vertical and 45° Pt-C replicas can visualize the deep-etched DNA helix and the 13.3 Å 32 helix of pectin in a gel. The DNA double helix, the complex structures of sol-gel glasses, Immobilon filters (polyvinylidene fluoride), a polymethacrylate plastic, the metal oxide surfaces of 440c stainless steel, and Al are illustrated. This high-resolution vertical Pt-C replica technique can image in the context of solns., gels, or solids, single mol. chains 3-7 Å wide, their assocns., and their conformation. Included in the present article are 1st time descriptions for removing replicas from metals and plastics and for making high-magnification photog. prints of normal contrast using a reversal rephotog. process.
CC 9-2 (Biochemical Methods)
IT Microscopy, electron
(transmission, of DNA and metal and plastic specimens, on ultrathin vertically shadowed platinum-carbon replicas)
IT 7440-44-0, Carbon, uses and miscellaneous
(ultrathin vertically shadowed replicas of carbon and, for transmission electron microscopy of DNA and metal and plastic specimens)
IT 7440-06-4, Platinum, uses and miscellaneous
(ultrathin vertically shadowed replicas of carbon and, for transmission electron microscopy of DNA and metals and plastics)

L134 ANSWER 28 OF 76 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1970:458026 HCAPLUS Full-text
DOCUMENT NUMBER: 73:58026
ORIGINAL REFERENCE NO.: 73:9515a,9518a
TITLE: New sources of raw materials for glass industry. II. A few silica deposits from Maharashtra
AUTHOR(S): Nayak, U. N.; Prasad, S. N.
CORPORATE SOURCE: Cent. Glass Ceram. Res. Inst., Calcutta, India
SOURCE: Central Glass and Ceramic Research Institute Bulletin (1969), 16(3), 77-80
CODEN: CGCRAP; ISSN: 0008-9397
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 12 May 1984
AB Of the 7 samples tested, the 1st was fairly white and contained ilmenite, sphene, tourmaline, and kaolinized feldspars as impurities. The 2nd sample was whitish and contained K feldspar, ilmenite, and tourmaline. The 3rd was coarse brownish and contained limonite, ilmenite, and tourmaline. The 4th was mainly white, containing tourmaline, K feldspar, sphene, and zircon. The 5th was coarse brownish, containing ilmenite, sillimanite, rutile, and sericite. The 6th was mainly light brown, containing ilmenite, rutile, sphene, tourmaline, and K feldspar. The 7th was white and pale yellow, containing K feldspar, biotite, ilmenite, and apatite. The 3rd and 4th were considered to be the most suitable for colored container ware. The 4th could even be beneficiated to a special grade for decorated ware such as Pb-crystal ware etc., while the 3rd was not improved by beneficiation. The 7th was usable for slightly inferior decolorized glassware. The 1st was usable for slightly tinted glassware. The 2nd, because of high Al2O3 content, was of doubtful use. The 5th and 6th could be used for colored ware only, but beneficiation led to upgrading to grade 1 and 2.
CC 53 (Mineralogical and Geological Chemistry)

=> d 29-46 full

L134 ANSWER 29 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 2006-304804 [32] WPIX Full-text
DNC C2006-101330 [32]
DNN N2006-258643 [32]
TI Analysis of saliva by surface-enhanced Raman spectroscopy (SERS) to detect drug(s), comprises separating drug(s) from interfering substances present in sample, mixing with SERS-active agent, and performing SERS
DC A89; B04; D16; J04; S03; S05
IN FARQHARSON S; FARQUHARSON S; GIFT A D; INSCORE F E; SHENDE C S
PA (FARQ-I) FARQUHARSON S; (GIFT-I) GIFT A D; (INSC-I) INSCORE F E; (REAL-N) REAL-TIME ANALYZERS INC; (SHEN-I) SHENDE C S
CYC 110
PI US 20060084182 A1 20060420 (200632)* EN 14[8]
WO 2006044062 A2 20060427 (200632) EN
ADT US 20060084182 A1 CIP of US 2004-967486 20041018; US 20060084182 A1 US 2005-98844 20050405; WO 2006044062 A2 WO 2005-US32621 20050915
PRAI US 2005-98844 20050405
US 2004-967486 20041018
IPCI G01N0021-00 [I,A]; G01N0021-00 [I,C]
EPC G01N0021-65; G01N0033-487C
ICO S01N0021:65D
NCL NCLM 436/171.000
AB US 20060084182 A1 UPAB: 20060518
NOVELTY - Analysis of saliva by surface-enhanced Raman spectroscopy (SERS), to determine presence and concentration of one or more drug species, comprises treating saliva sample to separate drug species from interfering chemicals, combining analyte sample with SERS-active material, performing SERS, and analyzing SERS spectrum obtained to determine the presence and concentration of one or more drug species present in analyte sample.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for an apparatus for use in the method, comprising means for treating a small saliva sample to produce an analyte sample, and means for containing a combined analyte sample and at least one surface-enhanced Raman spectroscopy (SERS)-active material, the containing means being in direct liquid flow communication with the means for treating, and having at least a section

designed to enable effective irradiation of the combined sample and SER-active material, and collection of the SERS radiation generated.

USE - The method and apparatus are useful for determining the presence and concentration of one or more drug or drug metabolite species in saliva by surface-enhanced Raman spectroscopy (claimed). The method is useful in determining concentrations of therapeutic drugs or their metabolites in subjects, and may be used e.g. in monitoring of individual patients receiving toxic drugs such as 5-fluorouracil, and in pharmacokinetic studies of new drugs. The method is also useful in determining drug identity where this is not already known e.g. so that appropriate treatment can be given to a subject who has overdosed on an over-the-counter, prescription, or illicit drug.

ADVANTAGE - Collection of saliva samples is non-invasive and convenient. The method incorporates steps to remove interfering substance which have prevented Raman spectra being obtained in some previous attempts to analyze body fluids by surface-enhanced Raman spectroscopy.

TECH INORGANIC CHEMISTRY - Preferred Agent: The surface enhanced Raman spectroscopy material comprises a metal selected from copper, gold, silver, nickel and their alloys and mixtures. The metal is in particulate form, or in the form of a surface having a morphology functionally equivalent to metal particles. The material comprises a chemically synthesized porous structure. The material comprises a sol-gel synthesized using a silica, titania or zirconia based alkoxide, and at least one surface-enhanced Raman-active metal. The material comprises a porous material able to produce chemical separations or selective chemical reactions.
INSTRUMENTATION AND TESTING - Preferred Method: The analyte sample contains at least two different drug or drug metabolite species. The volume of the saliva sample is less than about 0.5 ml. The interfering chemicals are all chemicals that hinder flow and/or chemically reactive the SERS-active surfaces and/or that produce spectra that substantially prevent the spectrum of the drug species being observed. The separation is effected by chemical, physical, and/or chromatographic methods. The separation employs a solvent. The physical treatment is filtration using e.g. a paper, glass or polymer filter. The chromatographic method uses a separation material selected from e.g. silica gels, long-chain alkane particles, and ion-exchange resins.
Saliva samples are obtained from a subject at multiple time intervals to allow changes in drug concentration to be determined. The method may further comprise separating drug and drug metabolite species.

FS CPI; EPI

MC CPI: A12-L04; B04-B04G; B05-A03A3; B05-A03B; B11-C07B2; B11-C07B6; B12-K04E; D05-H09; J04-B01A2
EPI: S03-A02B; S03-E04D1; S03-E14H2; S05-C02

L134 ANSWER 30 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

AN 2006-470214 [48] WPIX Full-text

CR 2006-304804

DNC C2006-147871 [48]

DNN N2006-383735 [48]

TI Analyzing saliva for the presence and concentration of a drug species, comprises treating the sample of saliva, combining the analyte sample with active material, and subjecting to surface-enhanced Raman spectroscopy

DC A89; B04; S03; S05

IN FARQUHARSON S; GIFT A D; INSCORE F E; SHENDE C S

PA (FARQ-I) FARQUHARSON S; (GIFT-I) GIFT A D; (INSC-I) INSCORE F E; (SHEN-I) SHENDE C S

CYC 1

PI US 20060084181 A1 20060420 (200648)* EN 11[2]

ADT US 20060084181 A1 US 2004-967486 20041018
PRAI US 2004-967486 20041018
IPCI G01N0021-00 [I,A]
EPC G01N0021-65; G01N0033-487C
ICO S01N0021:65D
AB US 20060084181 A1 UPAB: 20060727

NOVELTY - Analyzing saliva to determine the presence and concentration of a drug species by treating the sample to effect mutual separation of the drug species and interfering chemicals, combining the analyte sample with surface-enhanced Raman spectroscopy (SERS)-active material, subjecting to SERS, and analyzing the SERS spectrum.

DETAILED DESCRIPTION - Analysis of saliva by SERS to enable determination of the presence and concentration of at least one drug species, comprises:

(a) obtaining a small sample of saliva;

(b) treating the sample of saliva to effect mutual separation of the drug species and interfering chemicals present in the sample, to produce an analyte sample containing the drug species;

(c) combining the analyte sample with a SERS-active material;

(d) subjecting the combined analyte sample and SERS-active material to SERS to generate a SERS spectrum; and

(e) analyzing the SERS spectrum to determine the presence and concentration of the drug species in the analyte sample.

An INDEPENDENT CLAIM is also included for apparatus for the analysis of saliva by surface-enhanced Raman spectroscopy, comprising:

(a) a unit for treating a small sample of saliva to effect mutual separation of at least one drug species and interfering chemicals to produce an analyte sample; and

(b) a unit for containing a combined analyte sample and at least one SERS-active material, the containing mechanism being connected in direct liquid flow communication with the treating unit, and having at least a section constructed to enable effective irradiation of the combined analyte sample and at least one SERS-active material, and collection of surface-enhanced Raman scattered radiation generated.

USE - The method is used for analysis of saliva by surface-enhanced Raman spectroscopy to enable determination of the presence and concentration of at least one drug species (claimed).

ADVANTAGE - Drugs and their metabolites in saliva can readily be detected, identified, and quantified.

DESCRIPTION OF DRAWINGS - The figure is a schematic diagram showing apparatus for rapidly separating drugs and their metabolites from saliva.

Heat source (5)
Syringe (6)
Filter (7)
Capillary section (8)
Spectrometer (9)

TECH INSTRUMENTATION AND TESTING - Preferred Components: The analyte sample contains at least two different drug species.
The drug species include at least two different drugs or at least two different drug metabolites. The value of the obtained saliva sample is less than 0.5 ml, where the interfering chemicals constitute all chemicals present in the saliva sample that hinder flow of the drug species to the SERS-active surfaces, and/or that chemical deactivate the SERS-active surfaces, and/or that produce spectra that would prevent the spectrum of the drug species from being observed. The containing unit comprises a section for combining the analyte sample and at least one SERS-active material. The containing unit is prefilled to contain at least two different SERS-active materials, arranged seriatim.
Preferred Method: The mutual separation of drug species and the

interfering chemicals is effected by chemical treatments, physical treatments, and/or chromatographic methods. The chemical treatment employs a solvent for at least one of the drug species and the interfering chemical. The physical treatment involves passage of the analyte sample through a filter (7). The separation treatment is a chromatographic method. The saliva sample is obtained from a subject at each of a multiplicity of time intervals. The analysis of the SERS spectra, so generated following each of the time intervals, is effected for determining pharmaco-kinetics of the drug. The method includes the additional step of effecting the mutual separation of the drug and the metabolite by chemical treatments, physical treatments, and/or chromatographic methods.
METALLURGY - Preferred Materials: The surface enhanced Raman-active material comprises a metal selected from copper, gold. silver, nickel, and/or their alloys. The metal is of particulate form, or is in the form of a surface having a morphology functionally equivalent to metal particles.
ORGANIC CHEMISTRY - Preferred Components: The mutual separation of drug species and the interfering chemicals is effected by chemical treatments, physical treatments, and/or chromatographic methods. The chemical treatment employs a solvent for at least one of the drug species and the interfering chemical. The solvent is water having a selected pH value, acetone, acetonitrile, benzene, chloroform, carbon tetrachloride cyclohexane dichloromethane, diethyl ether dimethylsulfoxide, ethyl acetate, ethylene glycol, isopropyl ether, methyl ethyl ketone, n-hexane, tetrahydrofuran, and/or toluene.
POLYMERS - Preferred Materials: The mutual separation of drug species and the interfering chemicals is effected by chemical treatments, physical treatments, and/or chromatographic methods. The physical treatment involves passage of the analyte sample through a filter (7). The filter comprises a porous substrate selected from paper, coated paper, paper fibers, polymer, polymer fibers, mixed paper and polymer fibers, cellulose acetate, glass wool cotton, diatomite, porous glass, sintered glass, zirconia-stabilized silica, derivatized silica-based matrices, sol-gels, or derivatized sol-gels. The filter comprises a supported membrane covered with a separation material consisting of silica gels, zirconia-stabilized silica, derivatized silica-based matrices, sol-gels, derivatized sol-gels, glass beads, long-chain alkane particles, derivatized long-chain alkane particles, polymers, derivatized polymers, functionalized membranes, alumina, polystyrene, dendrimers, immobilized crown ethers, or ion-exchange resins. The chromatographic method employs a separation material. The surface-enhanced Raman-active material comprises a chemically synthesized porous structure, or a sol-gel synthesized utilizing a silica-based, titania-based or zirconia-based alkoxide, and at least one surface-enhanced Raman-active metal.
Preferred Method: The chemical reaction utilized to synthesize the porous structure comprises polymerization of at least one monomer that allows the inclusion of a surface-enhanced Raman-active metal. The surface-enhanced Raman-active material comprises a mixture of a porous material and at least one surface-enhanced Raman-active metal. The porous material is effective to produce chemical separations or selective chemical extractions. The porous material is selected from sol-gels, silica gels, silica stabilized by zirconia, derivatized silica-based matrices, long-chain alkane particles, and derivatized long-chain alkane particles.

FS CPI; EPI

MC CPI: A12-H04; A12-L04B; B04-B04G; B04-C02A; B04-C03; B11-C07B2; B11-C07B6; B11-C08D; B12-K04A

EPI: S03-E04D1; S03-E14H2; S05-C02

L134 ANSWER 31 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 2006-077928 [08] WPIX Full-text
DNC C2006-027998 [08]
DNN N2006-067640 [08]
TI Magnetic toner composition for use in developing electrostatic images, comprises toner particles that are surface treated with composition comprising silica particles, titania particles, and metal salt of fatty acid
DC A14; A17; A23; A26; A89; G08; P84; S06
IN GRANDE M L; HOLLENBAUGH W H
PA (XERO-C) XEROX CORP
CYC 1
PI US 20060003244 A1 20060105 (200608)* EN 6[0]
US 7208252 B2 20070424 (200729) EN
ADT US 20060003244 A1 US 2004-879117 20040630
PRAI US 2004-879117 20040630
IPCI G03G0009-083 [I,A]; G03G0009-083 [I,C]; G03G0009-083 [I,C]
EPC G03G0009-083B4; G03G0009-087D4; G03G0009-087F3; G03G0009-087H4; G03G0009-087H5; G03G0009-087H6; G03G0009-097B; G03G0009-097B1; G03G0009-097B3; G03G0009-097F1; G03G0009-107; G03G0009-107B; G03G0009-113D4; G03G0009-113H
AB US 20060003244 A1 UPAB: 20060201

NOVELTY - A magnetic toner composition comprises a binder, a colorant, a magnetic component, polypropylene wax, polyethylene wax, and a wax that functions as a wax compatibilizer. The toner particles are surface treated with a composition comprising a first, second, and/or third type of silica particles, titania particles, and a metal salt of a fatty acid.

DETAILED DESCRIPTION - A magnetic toner composition comprises a binder, a colorant, a magnetic component, polypropylene wax, polyethylene wax, and a wax that functions as a wax compatibilizer. The toner particles are surface treated with a composition comprising a first, second, and/or third type of silica particles, titania particles, and a metal salt of a fatty acid. The first type of silica particle is coated and has a median particle diameter of 25-60 nm. The second type of silica particle is coated and has a median particle diameter of 5-20 nm. The third type of silica particle has a median particle diameter of 50-200 nm. INDEPENDENT CLAIMS are also included for:

(1) a conductive developer comprising the magnetic toner particles and coated carrier particles; and

(2) a method of obtaining images in a magnetic image recognition system, comprising generating an electrostatic latent image on a charge retentive surface, developing the image with the composition, and transferring the image to a recording medium.

USE - For use in developing electrostatic images.

ADVANTAGE - The magnetic toner composition provides improved image quality and ease of production, yet has the capability of use in HJD-based systems and MICR systems.

TECH IMAGING AND COMMUNICATION - Preferred Material: The colorant is a black colorant. Preferred Property: The first type of the silica particle is amorphous silica particles of 30-50 (preferably 40) nm in median diameter coated with a siloxane coating (preferably polydimethylsiloxane coating). The second type of the silica particle is amorphous silica particles of 9-15 (preferably 12) nm in median diameter coated with a silane coating (preferably octyltrimethoxysilane coating). The third type of silica particle is sol-gel silica particles of 80-140 (preferably 110) nm in median diameter. The titania particles are 40 nm in median diameter, coated with a decyltrimethoxysilane coating.

INORGANIC CHEMISTRY - Preferred Material: The magnetic component is a magnetite.
ORGANIC CHEMISTRY - Preferred Material: The magnetic component is a magnetite.
POLYMERS - Preferred Material: The binder is a partially cross-linked polyester resin. The wax that functions as a wax compatibilizer is a copolymer of ethylene and glycidylmethacrylate. Preferred Property: The polypropylene wax has a molecular weight of 6000-11000. The polyethylene wax is a crystalline wax having a molecular weight of 1800-2200.

FS CPI; GMPI; EPI
MC CPI: A04-G02E3; A04-G03E1; A12-L05C2; G06-G05A
EPI: S06-A04C1

L134 ANSWER 32 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 2004-499647 [47] WPIX Full-text
DNC C2004-184987 [47]
DNN N2004-394718 [47]
TI Apparatus for dispensing sample for analysis by electrospray ionization mass spectrometry, has substrate having electrospray generating microstructures which has sample and second fluid that are directly mixed in Taylor cone of spray
DC A89; B04; D16; S03; U12; V05; V06
IN REYMOND F; ROSSIER J S; ROSSIER J
PA (DIAG-N) DIAGNOSWISS SA
CYC 105
PI

WO 2004051697	A2	20040617	(200447)*	EN	36[7]
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AU 2003302509	A1	20040623	(200472)	EN	
<--					
EP 1576642	A2	20050921	(200562)	EN	
JP 2006505797	W	20060216	(200614)	JA	21
US 20060113463	A1	20060601	(200637)	EN	
AU 2003302509	A8	20051117	(200638)	EN	
EP 1576642	B1	20070228	(200718)	EN	
DE 60312220	E	20070412	(200726)	DE	
US 7265348	B2	20070904	(200759)	EN	
DE 60312220	T2	20071115	(200777)	DE	

ADT WO 2004051697 A2 WO 2003-EP13328 20031107; AU 2003302509 A1 AU 2003-302509 20031107; AU 2003302509 A8 AU 2003-302509 20031107; DE 60312220 E DE 2003-612220 20031107; EP 1576642 A2 EP 2003-812160 20031107; EP 1576642 B1 EP 2003-812160 20031107; DE 60312220 E EP 2003-812160 20031107; EP 1576642 A2 WO 2003-EP13328 20031107; JP 2006505797 W WO 2003-EP13328 20031107; US 20060113463 A1 WO 2003-EP13328 20031107; EP 1576642 B1 WO 2003-EP13328 20031107; DE 60312220 E WO 2003-EP13328 20031107; US 7265348 B2 WO 2003-EP13328 20031107; JP 2006505797 W JP 2004-556196 20031107; US 20060113463 A1 US 2005-534301 20050509; US 7265348 B2 US 2005-534301 20050509; DE 60312220 T2 DE 2003-612220 20031107; DE 60312220 T2 EP 2003-812160 20031107; DE 60312220 T2 WO 2003-EP13328 20031107
FDT DE 60312220 E Based on EP 1576642 A; AU 2003302509 A1 Based on WO 2004051697 A; EP 1576642 A2 Based on WO 2004051697 A; JP 2006505797 W Based on WO 2004051697 A; AU 2003302509 A8 Based on WO 2004051697 A; EP 1576642 B1 Based on WO 2004051697 A; DE 60312220 E Based on WO 2004051697 A; US 7265348 B2 Based on WO 2004051697 A; DE 60312220 T2 Based on EP 1576642 A; DE 60312220 T2 Based on WO 2004051697 A
PRAI GB 2002-26160 20021108

IC ICM H01J049-04
IPCI B01D0059-00 [I,C]; B01D0059-44 [I,A]; G01N0027-62 [I,A]; G01N0030-00 [I,C]; G01N0030-72 [I,A]; H01J0049-00 [I,A]; H01J0049-00 [I,C]; H01J0049-00 [I,C]; H01J0049-02 [I,C]; H01J0049-02 [I,C]; H01J0049-02 [I,C]; H01J0049-02 [I,C]; H01J0049-04 [I,A]; H01J0049-04 [I,A]; H01J0049-04 [I,A]; H01J0049-10 [I,A]
IPCR H01J0049-02 [I,C]; H01J0049-04 [I,A]
EPC H01J0049-04
NCL NCLM 250/288.000
NCLS 204/451.000; 250/285.000; 250/428.000; 250/435.000; 250/438.000
AB WO 2004051697 A2 UPAB: 20060121

NOVELTY - An apparatus (I) for dispensing sample for analysis by electrospray ionization mass spectrometry, comprises substrate of electrically insulating material having two covered microstructures, where electrospray is generated by application of voltage, one of microstructures containing sample solution and second fluid, where sample and second fluid are arranged to be directly mixed in Taylor cone of spray.

DETAILED DESCRIPTION - An apparatus (I) for dispensing a sample for analysis by electrospray ionization mass spectrometry, comprises a substrate (100) of electrically insulating material consisting of at least two covered microstructures both having an outlet (6) at the edge of the substrate, where the electrospray is to be generated by application of a voltage and an inlet for fluid introduction, one of the microstructures containing the sample solution to be sprayed and at least one other of the microstructures containing a second fluid, preferably a sheath liquid or a sheath gas, where the sample solution and the second fluid are arranged to be directly mixed in the Taylor cone of the spray.

INDEPENDENT CLAIMS are also included for:

(1) fabricating (M1) (I), involves taking a substrate of electrically insulating material, fabricating at least two covered microstructures, both having an outlet at the edge of the substrate, where the spray is to be generated by application of a voltage and an inlet for fluid introduction, such that the sample and sheath liquid solutions to be sprayed from the microstructures through these outlets are mixed in the Taylor cone;

(2) a coupling device (II) comprising one or several of (I), comprising one or several fluid connection(s) for minimizing dead volumes at the microstructures inlets, and/or electrical connection(s) for application of potential differences in the microstructures and/or a system enabling the precise positioning of the apparatus(s) in front of a mass spectrometer entrance; and

(3) an analytical instrument comprising an array of (I).

USE - (I) is useful for dispensing a sample for subsequent analysis by electrospray mass spectrometry which involves applying a voltage to the sheath liquid solutions in order to initiate the spray and of imposing another voltage to the sample solution in order to induce a flow of sample, both sheath liquid and sample solutions being mixed directly in the Taylor cone. The proportion of sheath liquid and of sample solutions sprayed is controlled by the difference of the voltage applied in the sheath liquid and that applied in the sample solution. A floating voltage is applied between the sample and the sheath liquid. An aqueous sample solution is sprayed. The method involves introducing a compound of known concentration in either or both of the sample and/or the sheath liquid solutions. The method involves controlling the proportion of sheath liquid and sample solution sprayed and/or of performing quantitative mass spectrometry analyses. The method involves immobilizing molecules of the sample reversibly on a solid support, and releasing the molecules from the support into the sample microstructures by a spraying buffer or by a gradient of different solvents. The method involves filling the sample microstructure with, or immobilizing or covalently binding to the surface of the microstructure or to a solid support a biological or chemical compound such as proteins, enzymes, antibodies, antigens, sugars,

oligonucleotides, DNA, cells or an organic compound, so as to perform a biological assay such as enzymatic, affinity, activity, immunological and/or cellular assays and/or to perform a chemical assay such as solubility, permeability or lipophilicity tests, and/or to perform enzymatic or chemical digestion, sample derivatization or electrochemically induced reactions such as protonation, tagging using quinones or any other redox reactions, with subsequent analysis by electrospray mass spectrometry. At least one affinity agent is immobilized on the solid support, where the affinity agent is chosen from antibodies, antigens, oligonucleotides, DNA strains, etc. After the step of immobilizing the molecules of the sample, the solid support is placed in contact with the sample microstructure. The chemical reaction and/or an affinity reaction occurs in or on the solid support prior to the releasing step. The chemical reaction and/or affinity reaction comprises at least one of desalting, enzyme or chemical digestion, chemical transformation and purification. The solid support is chosen from polymers, ceramics, metallic and glass materials, e.g., polyvinylidenefluoride (PVDF), nitrocellulose, cellulose acetate, acrylamide agarose, etc. After the step of coating a compound in the sample microstructure, a buffer is introduced to partially or totally dissolve the compound for subsequent analysis by electrospray mass spectrometry. The separation is performed in the sample microstructure and/or an partial or total extraction in a solution in contact with the sample solutions is performed prior to spraying of the sample solution. An organic phase is deposited at the inlet of the sample microstructure in order to avoid evaporation of the sample solution to be sprayed. The sample and sheath liquid solutions are applied directly in the inlet reservoirs (3,4) of the respective microstructures and sprayed into a mass spectrometer, without application of an external force (e.g., back pressure). (I) is useful for analyzing several samples which involves taking an array of (I), using several (I) in turn to collected a sample, and dispensing each sample from the respective apparatus and analyzing each sample by mass spectrometry. The samples are collected from an analytical system, e.g., a chromatograph, electrophoretic unit, separation unit or an affinity system. (I) is useful for performing chemical or biological assay using (I) or array of (I), with detection by electrospray mass spectrometry. The chemical or biological assays are chosen from enzymatic, affinity, activity, immunological and/or cellular assays, solubility, or lipophilicity tests (all claimed).

ADVANTAGE - The distance between the outlet of sample microstructure and sheath liquid microstructure is smaller than 200 micrometers, so that the Taylor cone formed during the spray encompasses both outlets. This short distance allows efficient mixing of the solutions and prevents formation of liquid drops at the microstructure outlet, which facilitates the spray generation and favors the spray stability. The supporting device advantageously comprise liquid connection mode to enable easy sample and/or sheath liquid introduction in the microstructures of (I).

DESCRIPTION OF DRAWINGS - The figure shows schematic perspective view of an apparatus for dispensing sample for analysis by electrospray ionization mass spectrometry.

Sample microchannel (1)
Sheath liquid microchannel (2)
Inlet reservoirs (3,4)
Outlet (6)
Substrate (100)

TECH INSTRUMENTATION AND TESTING - Preferred Apparatus: In (I), the substrate is a multilayer body, preferably of polymer material(s), in which at least two layers of the multilayer body each comprise one of the at least two microstructures. (I) has a thickness smaller than 500 micrometers. (I) comprises electrically or ionically conductive unit for applying a voltage to the sample and/or sheath liquid solution(s), the conductive unit having a controlled size and location. The conductive unit comprises one or several electrodes and/or one or

several electrically conductive pads. The conductive unit is(are) integrated in one wall of the microstructure(s) and/or is in contact with the solution(s) at the inlet(s) of the microstructure(s). In (I), the spray voltage is applied through external electrically or ionically conductive unit arranged to be in contact with the solutions to be sprayed, for instance by placing the conductive unit in the solutions to be sprayed at the inlets of the microstructures. The conductive unit comprises an electrically conductive ink, or a metallic layer, or a conducting polymer such as polypyrrole or polyaniline, or a conductive gel, or an ion exchange polymer arranged to be in contact with the solutions to be sprayed. The distance between the outlet of the sample microstructure and that of the sheath liquid microstructure is smaller than 200 micrometers. The sample microstructure and the sheath liquid microstructure are connected at the edge of the substrate, thus forming a single outlet. The microstructure outlets taper in the spraying direction. The microstructure outlets are hydrophobic or are surrounded by a hydrophobic material. The microstructures have at least one dimension of less than about 150 micrometers. The sample microstructure and/or the sheath liquid microstructure communicate(s) with a network of microstructures. The sample microstructure has a hydrophilic surface. Gluing, lamination or pressure application of a polymer foil seals the covered microstructures. The sample solution is an aqueous solution. The sample microstructure contains a biological or a chemical material, such as proteins, enzymes, antibodies, antigens, sugars, oligonucleotides, DNA, cells or an organic compound, which is filled in the microstructure or which is coated, immobilized or covalently bound to the microstructure surface or to a solid support (such as membrane, gel, sol-gel, beads, etc.,),
so as to perform a biological assay such as enzymatic, affinity, activity, immunological and/or cellular assays and/or to perform a chemical assay such as solubility, permeability or lipophilicity tests, and/or to perform enzymatic or chemical digestion, sample derivatization or electrochemically induced reactions such as protonation, tagging using quinines or any other redox reactions. The sample microstructures comprise a separation unit, comprising at least one of the solid phase, a chromatography medium or a capillary electrophoresis system. The separation unit comprises a solid phase chosen from a membrane, beads and/or a section of the microstructure wall. The sample microstructure is connected to a separation unit, e.g. a chromatography column, an electrophoresis unit, membrane, desalting step, affinity column, etc. The sample microstructure preferably comprises a network of interconnected microstructures, which is used to collect fractions from the separation unit and further dispense them or part of them into the mass spectrometer by electrospray generation. (I) is supported in a device for the precise positioning of the microstructure outlet in front of a mass spectrometer entrance and/or the facilitation of the electrical connection(s) with one or several of power supplies and/or the introduction of the sample and/or sheath liquid solution(s) with minimized dead volume. A third microstructure is used to introduce a sheath gas in the spray.
Preferred Method: (M1) involves taking a substrate which is a multilayer body, fabricating at least one covered microstructures in a several of the layers, assembling the several layers and optionally cutting the assembled multilayer body, so as to obtain at least two covered microstructures, both having an outlet at the edge of the substrate, where the spray is to be generated by application of a voltage and an inlet for fluid introduction, so that the sample and sheath liquid solutions to be sprayed from the microstructures through

these outlets are mixed in the Taylor cone. (M1) involves integrating electrically or ionically conductive unit. The conductive portion unit is formed by laser photoablation, by plasma etching, by chemical etching, by deposition of an ink, of a conductive polymer, by integration of an ion exchange material, by metal deposition, by sputtering, etc. The conductive unit is integrated in the cover of the microstructures. (M1) involves adding an electrode in a reservoir connected to the inlet of at least one of the covered microstructures, such as to apply a voltage from outside the microstructure(s). The substrate is a polymer material. The microstructure are formed by laser photoablation, UV-Liga, embossing, injection molding, solvent casting, light or thermal induced polymerization, silicon technology or superposition of layers at least one comprising mechanically drilled grooves, hollows or holes. Several apparatus are fabricated in the same substrate, thus creating an array of apparatuses.

FS CPI; EPI

MC CPI: A12-L04B; A12-W11L; B04-B03C; B04-D01; B04-E01; B04-F01; B04-G01; B04-L01; B04-N04; B11-C08A; B11-C08D1; B11-C08D2; B12-K04; D05-A01A2; D05-A01B; D05-H09; D05-H10
EPI: S03-E10A; S03-E14H; U12-B03F1A; V05-J01A1; V05-J01C; V05-J01E; V06-M06G1; V06-U12

L134 ANSWER 33 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

AN 2004-491436 [47] WPIX Full-text

DNC C2004-183370 [47]

DNN N2004-387645 [47]

TI Metal colloidal particle for metal colloid, is obtained by carrying out coordination modification at metal particle surface by protecting an agent having a carbon structure and a specific functional group

DC B04; D16; D18; E11; G02; J04; L02; L03; M13; P53; P81; Q71; V07

IN ATSUGI T; HAYASHI T

PA (MITV-C) MITSUBISHI MATERIALS CORP

CYC 1

PI JP 2004162169 A 20040610 (200447)* JA 26[15]
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ADT JP 2004162169 A JP 2003-195574 20030711

PRAI JP 2002-281604 20020926

IPCR B01F0017-54 [I,A]; B01F0017-54 [I,C]; B01J0013-00 [I,A]; B01J0013-00 [I,C]; B01J0019-00 [I,A]; B01J0019-00 [I,C]; B22F0001-02 [I,A]; B22F0001-02 [I,C]; B22F0009-00 [I,A]; B22F0009-00 [I,C]; C09D0185-00 [I,A]; C09D0185-00 [I,C]; C09D0007-12 [I,A]; C09D0007-12 [I,C]; C23C0020-00 [I,C]; C23C0020-02 [I,A]; F21S0010-00 [I,C]; F21S0010-02 [I,A]; F21S0008-10 [I,A]; F21S0008-10 [I,C]; F21V0009-00 [I,C]; F21V0009-08 [I,A]; G02B0005-20 [I,A]; G02B0005-20 [I,C]

AB JP 2004162169 A UPAB: 20050530
NOVELTY - A metal colloidal particle, obtained by carrying out coordination modification at metal particle surface by protecting an agent using atom group having nitrogen, or nitrogen as anchor, is new.

DETAILED DESCRIPTION - A metal colloidal particle obtained by carrying out coordination modification at metal particle surface by protecting an agent using atom group having nitrogen, or nitrogen as anchor, is new. The agent has carbon structure and contains nitrogen in molecule. The agent has alkoxy silyl and/or silanol in molecular structure as functional group. The particles are dispersed in water or organic solvent, and a metal colloid is formed.

INDEPENDENT CLAIMS are included for:

(1) a metal colloid which is obtained by dispersing metal colloidal particle in aqueous or non-aqueous solvent at predetermined ratio;

(2) a metal colloid thin film which is obtained using the metal colloid;

(3) a metal colloid-containing coating film which is formed by applying the metal colloid on a base material surface;
(4) a transparent material which has metal colloid or metal colloid thin film on a base material surface;
(5) a color filter having the metal colloid thin film as filter layer on a base material surface;
(6) a display panel containing metal colloid thin film on a transparent base material;
(7) a heat-resistant coating material containing the metal colloid; and
(8) a lamp for motor vehicle which is colored with the metal colloid.
USE - For metal colloid, metal colloid thin film, metal colloid-containing coating film, transparent material, color filter, display panel, heat-resistant coating material and lamp for motor vehicle (claimed).
The metal colloid is used as coating material for decoration, and ink for calligraphy, ceramic art, glass-blowing, fountain pen, marker and printing.
ADVANTAGE - The metal colloidal particle has excellent dispersibility, and provides high concentration metal colloid with excellent stability, small viscosity change and change of color tone. The colloid forms thin film with excellent strength and glossiness.

TECH ORGANIC CHEMISTRY - Preferred Group: The protective agent optionally has hydroxyl alkyl group, and further contains alkyl silyl group in the molecule. The atom group having nitrogen is amino, amide atom and/or imide atom.
INORGANIC CHEMISTRY - Preferred Properties: The diameter of colloidal particle is 100 nm or less. The shape of particle is grain-shape, ball-shape or polygon. The change of color tone of particle under heating reference temperature is 2% or less.
Preferred Particles: The protective agent and metallic compound are mixed in non-aqueous. The compound is reduced in the presence of a reducer, and the agent is bonded with metal particle surface using atom group having nitrogen, or nitrogen as anchor. The atom group is alkoxysilane containing amino group. Nitrogen of amino group is used as anchor, and is bonded with the metal particle surface. Alkoxy silane carries out chelate coordination by the chelating agent. The metal particle is gold, silver, platinum, palladium, ruthenium, rhodium, copper, nickel and/or iridium. The particle diameter is 0.1-60 nm.
Preferred Colloid: A sol-gel solution and metal colloidal particle are mixed at predetermined ratio, to obtain metal colloid. The sol-gel solution is solution of silica, titania, zirconia, alumina, tantalum oxide and/or niobium oxide.
Preferred Material: The base material is ceramic, glass, plastic, metal, timber, tile, cement, concrete, stone, fiber, paper or leather.

ABEX EXAMPLE - Chloroauric acid was dissolved in mixed solution of aminopropyl trimethoxysilane (15.76 g) and methanol, to obtain solution (A). The solution (A) (57 g) and gold were mixed such that gold concentration was 2.5 weight%. Acetyl acetone (24 g) was added in the solution. Sodium borohydride was added in the solution as reducer, to obtain colloid. The reaction solution was desalted by ultrafiltration, to obtain gold colloid with concentration of 20 weight%. The colloid had stability for a long period of time.

FS CPI; GMPI; EPI

MC CPI: B05-A03B; B05-B01B; B05-B02C; B12-M11D; D05-H10; D07-B; E05-E02B; E05-E03; E31-P06E; G02-A04A; G02-A05E; J04-A03; L02-A07; L03-G02B; L03-G05; L03-H04A; L03-H05; M13-B
EPI: V07-F02B

L134 ANSWER 34 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

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AN   2003-300418 [29]   WPIX  Full-text
DNC  C2003-078120 [29]
DNN  N2003-239116 [29]
TI   Gel composition useful in monitoring the level of analyte in a
     sample comprises first and second
     gel-forming fragments binding reversibly to one another to form a gel
DC   A96; B07; S03
IN   TAYLOR M; TAYLOR M J; TAYLOR M J D M U
PA   (TAYL-I) TAYLOR M; (UYDM-N) UNIV DE MONTFORT
CYC  99
PI   WO 2003006993   A2 20030123 (200329)* EN  56[15]
     <--
     EP 1407267      A2 20040414 (200426)  EN
     <--
     AU 2002317321   A1 20030129 (200452)  EN
     <--
     JP 2004534103   W  20041111 (200474)  JA  94
     <--
     US 20040265386  A1 20041230 (200503)  EN
     <--
ADT  WO 2003006993 A2 WO 2002-GB3183 20020710; AU 2002317321 A1
     AU 2002-317321 20020710; EP 1407267 A2 EP 2002-745605
     20020710; EP 1407267 A2 WO 2002-GB3183 20020710; JP
     2004534103 W WO 2002-GB3183 20020710; US 20040265386 A1
     WO 2002-GB3183 20020710; JP 2004534103 W JP 2003-512710
     20020710; US 20040265386 A1 US 2004-483313 20040708
FDT  EP 1407267 A2 Based on WO 2003006993 A; AU 2002317321 A1 Based on WO
     2003006993 A; JP 2004534103 W Based on WO 2003006993 A
PRAI GB 2001-16860         20010710
IC   ICM A61K009-06; G01N033-543
     ICS A61K047-06; A61K009-00
IPCR A61K0038-28 [I,A]; A61K0038-28 [I,C]; A61K0047-32 [I,A]; A61K0047-32
     [I,C]; A61K0047-36 [I,A]; A61K0047-36 [I,C]; A61K0047-42 [I,A];
     A61K0047-42 [I,C]; A61K0047-46 [I,A]; A61K0047-46 [I,C]; A61K0009-06
     [I,A]; A61K0009-06 [I,C]; A61P0005-00 [I,C]; A61P0005-50 [I,A];
     G01N0011-10 [I,C]; G01N0011-14 [I,A]; G01N0033-543 [I,A]; G01N0033-543
     [I,C]; G01N0033-544 [I,C]; G01N0033-548 [I,A]; G01N0033-558 [I,C];
     G01N0033-559 [I,A]
EPC  A61K0009-00M3; A61K0047-36; A61K0047-42; G01N0033-543D; G01N0033-548;
     G01N0033-559
ICO  K61K0047:32
NCL  NCLM  424/486.000
AB    WO 2003006993 A2   UPAB: 20050528
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NOVELTY - A gel composition comprises a first and second gel-forming fragments binding reversibly to one another to form a gel.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) a drug delivery system comprising the gel composition and a drug contained either within the gel composition or in a reservoir with the gel composition forming a barrier between the reservoir and the area to which the drug is to be released;

(2) a sensor for detecting the level of an analyte comprising the gel composition and a device for detecting the viscosity of the gel;

(3) production of a gel composition involving causing the first and/or second gel-forming fragments to become attached to cross-linked particulate entities;

(4) a pharmaceutical composition comprising a carrier containing either an active agent or forming a barrier between the active agent and the area to which the active agent is to be released. At least a part of the carrier is

digestible by at least one skin enzyme such that the active agent is released from the composition by the action of the enzyme; and

(5) a composition comprising a carrier covalently bonded to an active agent. The carrier and the active agent is digestible by at least one skin enzyme.

USE - In a sensor for detecting the level of an analyte and a drug delivery system (claimed); for monitoring the level of analyte in a sample and delivering drugs in response to abnormal levels of the analyte.

ADVANTAGE - The composition is less prone to dispersal. The binding of the gel-forming fragments is sensitive to the level of an analyte and either or both the gel-forming fragments are attached to cross-linked particulate entities hence the interstices between the entities allow gel-sol and sol- gel transformation and are not so small that the analyte cannot diffuse (claimed). The viscosity of the gel composition is sensitive to the level of analyte and hence can control the permeability of solute within it.

TECH ORGANIC CHEMISTRY - Preferred Composition: The composition optionally can be in combination with a semi-permeable or permeable membrane.
Preferred Components: The first fragment is a macromolecule (preferably dextran) that when bound together forms a gel. The second fragment is a molecule that when binds to at least a part of the macromolecule provides binding. The second fragment is a lectin (preferably concanavalin A) or an antibody.
POLYMERS - Preferred Components: The first and second fragments are in the form of a copolymer. The particulate entities are polymers, which are locally cross-linked. The first and/or second are attached directly or indirectly (via a polymer) to the particulate entities. The polymer is an acrylic acid polymer or copolymer or a cross-linked carbomer (such as Carbopol 974P or Carbopol 934P).

ABEX ADMINISTRATION - The composition is administered transdermally (claimed). No dosage given.
EXAMPLE - A carbomer dispersion (1 w/w.%) was prepared in MES buffer, adjusted to neutral and stirred. Concanavalin A (Con A) was added to it. The system was conjugated using 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDAC) (50 mM). The mixture was quenched after stirring for 3 hours at room temperature by diluting with phosphate buffered saline (PBS) and washings were centrifuged from the partially-dehydrated carbomer conjugate until no further con A in the supernatant. The total protein removed was calculated by assaying bulked and filtered washings. The washing efficiency was greater than 90 %. A dextran D2M (20 w/w.%) (1 g) solution in PBS was added to the neutralized carbomer-con A conjugate and mixed thoroughly. The final produce contained carbomer and dextran D2M (200 mg) each. The performance of the formulation was detected. A control was prepared using a simple aqueous combination of dextran D2M and con A without carbomer. It was observed that dextran in the presence of carbomer gave more viscous product than the control.

FS CPI; EPI

MC CPI: A12-L; A12-S; A12-V03C2; B04-C02C; B04-C03; B04-G01; B04-N04; B12-M02F; B12-M03
EPI: S03-E14H; S03-F03

L134 ANSWER 35 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

AN 2003-459316 [44] WPIX Full-text

DNC C2003-122334 [44]

DNN N2003-365306 [44]

TI Insert for grills and ovens, useful especially for barbecues, has a surface coated with an inorganic polycondensate to impart antiadhesion properties

DC A84; G02; P28; P42; Q74

PA (EICH-N) EICHENAUER GMBH & CO KG F

CYC 1
PI DE 20121109 U1 20030417 (200344)* DE 11[2]
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ADT DE 20121109 U1 DE 2001-20121109 20011214
PRAI DE 2001-20121109 20011214
IPCR A47J0037-06 [I,A]; A47J0037-06 [I,C]; C08K0003-00 [N,A]; C08K0003-00 [N,C]; C09D0183-04 [I,A]; C09D0183-04 [I,C]; F24C0015-00 [I,A]; F24C0015-00 [I,C]
EPC A47J0037-06D; C09D0183-04; F24C0015-00D
ICO M08K0003:00P5
AB DE 20121109 U1 UPAB: 20050530
NOVELTY - Insert for grills and ovens, particularly barbecues, that includes a surface having a coating (2) which includes an inorganic polycondensate (I).
USE - The inserts are particularly used in barbecues, but may also be baking trays.
ADVANTAGE - The coating is long-lasting; fire- and abrasion-resistant; and has good antiadhesion properties, also high mechanical and chemical resistance and excellent adherence to metal surfaces.
TECH INORGANIC CHEMISTRY - Preferred Materials: The coating comprises:
(i) a polycondensed silane (X);
(ii) nanoparticles of silica, at 10-80, preferably 20-50, vol.%; and
(iii) an alkali or alkaline earth metal oxide, especially sodium oxide (so that the thermal expansion coefficient of (3) matches that of stainless steel).
The proportion of silica particles is such that the ratio Si atoms in (X) to Si atoms in the silica is 5:1-1:2, preferably 4-2:1. The coating is essentially amorphous and is consolidated by heating to form a glass-like layer. It may be colored.
Preferred Preparation: The coating composition is formed, by a sol-gel process (see DE19714949), by hydrolysis and polycondensation of ethoxy- and/or methoxy-silanes. The condensation product is applied by spraying or dipping, dried then hardened at 350-500degreesC, under air or nitrogen.
ORGANIC CHEMISTRY - Preferred Silanes: These are (i) at least one of (m)ethyltrimethoxy-, ethyltriethoxy- or methyltriethoxy-silanes in combination with (ii) at least one tetramethoxy- or tetraethoxy-silane. Optionally at least one silane is fluorinated, to improve antiadhesion properties.
ABEX EXAMPLE - A coating was prepared by stirring, for 12 hours at room temperature, a mixture of 25 ml methyltriethoxysilane, 7 ml tetraethoxysilane and 0.8 g sodium or potassium hydroxide. The solution was diluted with 3.2 ml water, filtered (0.8 micron) and formulated with a solvent of high boiling point and a wetting agent. The final mixture was sprayed, the coating dried, then heated at 350-500degreesC.
FS CPI; GMPI
MC CPI: A06-A00E1; A12-D04; G02-A05

L134 ANSWER 36 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 2002-519128 [55] WPIX Full-text
DNC C2002-146796 [55]
DNN N2002-410952 [55]
TI Color shifting pigment flake or foil for use in colorant compositions comprises titanium-containing absorber layer comprising absorbing material which is free of titanium dioxide
DC A60; E37; G01; L02; L03; P73; T05
IN ARGOITIA A; KOHLMANN P T; LEGALLEE C R; PHILLIPS R W; RAKSHA V
PA (FLEX-N) FLEX PROD INC; (JDSU-N) JDS UNIPHASE CORP
CYC 24

PI WO 2002031058 A1 20020418 (200255)* EN 64[20]
<--
US 6569529 B1 20030527 (200337) EN
<--
EP 1326925 A1 20030716 (200347) EN
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US 20030203222 A1 20031030 (200372) EN
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US 20030203223 A1 20031030 (200372) EN
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US 20030215641 A1 20031120 (200377) EN
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KR 2003064764 A 20030802 (200401) KO
<--
JP 2004512394 W 20040422 (200428) JA 100
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US 6849343 B2 20050201 (200511) EN
US 6933048 B2 20050823 (200556) EN
US 20050287369 A1 20051229 (200603) EN
US 6991860 B2 20060131 (200610) EN
CN 1688659 A 20051026 (200618) ZH
US 7235300 B2 20070626 (200742) EN

ADT WO 2002031058 A1 WO 2001-US20418 20010627; US 6569529 B1 US 2000-685468 20001010; US 20030203222 A1 Div Ex US 2000-685468 20001010; US 20030203223 A1 Div Ex US 2000-685468 20001010; US 20030215641 A1 Div Ex US 2000-685468 20001010; US 6849343 B2 Div Ex US 2000-685468 20001010; US 6933048 B2 Div Ex US 2000-685468 20001010; US 20050287369 A1 Div Ex US 2000-685468 20001010; US 6991860 B2 Div Ex US 2000-685468 20001010; CN 1688659 A CN 2001-820105 20010627; EP 1326925 A1 EP 2001-950536 20010627; EP 1326925 A1 WO 2001-US20418 20010627; JP 2004512394 W WO 2001-US20418 20010627; JP 2004512394 W JP 2002-534432 20010627; KR 2003064764 A KR 2003-704985 20030409; US 20030203222 A1 US 2003-413091 20030414; US 6849343 B2 US 2003-413091 20030414; US 20030203223 A1 US 2003-413092 20030414; US 20050287369 A1 Div Ex US 2003-413092 20030414; US 6991860 B2 US 2003-413092 20030414; US 20030215641 A1 US 2003-413253 20030414; US 6933048 B2 US 2003-413253 20030414; US 20050287369 A1 US 2005-192642 20050729; US 7235300 B2 Div Ex US 2000-685468 20001010; US 7235300 B2 Div Ex US 2003-413092 20030414; US 7235300 B2 US 2005-192642 20050729

FDT US 20030203222 A1 Div ex US 6569529 B; US 20030203223 A1 Div ex US 6569529 B; US 20030215641 A1 Div ex US 6569529 B; US 6849343 B2 Div ex US 6569529 B; US 6933048 B2 Div ex US 6569529 B; US 20050287369 A1 Div ex US 6569529 B; US 6991860 B2 Div ex US 6569529 B; EP 1326925 A1 Based on WO 2002031058 A; JP 2004512394 W Based on WO 2002031058 A; US 7235300 B2 Div ex US 6569529 B; US 7235300 B2 Div ex US 6991860 B

PRAI US 2000-685468 20001010
US 2003-413091 20030414
US 2003-413092 20030414
US 2003-413253 20030414
US 2005-192642 20050729

IC ICM C09C001-00

IPCI B32B0005-16 [I,A]; B32B0005-16 [I,C]; B32B0009-04 [I,A]; B32B0009-04 [I,C]

IPCR B32B0015-02 [I,A]; B32B0015-02 [I,C]; C09C0001-00 [I,A]; C09C0001-00

[I,C]; C09D0017-00 [I,A]; C09D0017-00 [I,C]; C09D0005-36 [I,A]; C09D0005-36 [I,C]; G02B0005-28 [I,A]; G02B0005-28 [I,C]

EPC C09C0001-00F; C09D0005-36; G02B0005-28F

ICO M01P0006:60; M01P0006:62; M01P0006:63; M01P0006:64; M01P0006:65; M01P0006:66

NCL NCLM 428/403.000
NCLS 428/403.000; 428/404.000; 428/548.000; 428/698.000; 428/699.000

AB WO 2002031058 A1 UPAB: 20060120

NOVELTY - Color shifting pigment flake or foil comprises a dielectric layer on a reflector layer, and a first titanium-containing absorber layer comprising an absorbing material free of titanium dioxide on the dielectric layer. The pigment flake exhibits a discrete color shift such that it has different first and second colors at respective first and second angles of incident light or viewing.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(A) A color shifting pigment composition comprising several shifting pigment flakes.

(B) A color shifting colorant composition comprising a pigment medium and several color shifting pigment flakes dispersed in the pigment medium.

(C) A color shifting foil device comprising a carrier substrate, a first titanium-containing absorber layer on the carrier substrate, a dielectric layer on the first titanium-containing absorber layer, and a second titanium-containing absorber layer on the dielectric layer.

(D) A method of fabricating a color shifting pigment flake composition, which comprises providing at least one reflector layer, forming at least one dielectric layer on the reflector layer, and forming at least one titanium-containing absorber layer on the dielectric layer.

USE - The color shifting pigment flake or foil is dispersed into liquid media, e.g. paints or inks, to produce colorant compositions for subsequent application to objects or papers. The foils can be laminated to various objects or can be formed on a carrier substrate. Color shifting pigments have been used in applications, e.g. cosmetics, inks, coating materials, ornaments, ceramics, automobile paints, anti-counterfeiting hot stamps and anti-counterfeiting inks for security documents and currency. The color shifting flakes can also be utilized in forming colored plastic materials, coating compositions, extrusions, electrostatic coatings, glass and ceramic materials. They are also useful in other products, e.g. cosmetics, toys for children and fashion apparel e.g. in leather goods and cloth goods that are constantly touched.

ADVANTAGE - The use of the color shifting flakes in a colorant composition provides high chroma durable paint or ink in which variable color effects are noticeable to the human eye. The flakes have a wider angle of color shifting properties including large shifts in chroma (degree of color purity) and large shifts in hue (relative color) with a varying angle of view. Thus, an object colored with a paint containing the flakes will change color depending upon variations in the viewing angle or the angle of the object relative to the viewing eye. The flakes can be easily and economically utilized in paints and inks. The titanium-based absorbers used in the pigment flakes are chemically and environmentally benign, and avoid metal welding during the flake coating process. They also avoid the auto-ignition problem of prior titanium coating techniques. The pigment or foil is durable to water, acid, bleach and base and is stable to ultraviolet (UV) radiation exposure.

DESCRIPTION OF DRAWINGS - The figure is a schematic representation of the coating structure of a color shifting pigment flake.

TECH INORGANIC CHEMISTRY - Preferred Components: The pigment flake further comprises a second dielectric layer on the reflector layer opposite the first dielectric layer, and a second titanium-containing absorber layer on the second dielectric layer opposite the first titanium-containing absorber layer. The absorber layer surrounds the

dielectric layer and the reflector layer, and the dielectric layer surrounds the reflector layer. It surrounds the first and second dielectric layers and the reflector layer. The reflector layer comprises a core flake section including a reflector sublayer having a top surface, a bottom surface and at least one side surface, and a support sublayer preformed on at least one of the top and bottom surfaces but not on the side surface of the reflector sublayer. The reflector layer comprises a composite reflective flake including a central support sublayer having a top surface, a bottom surface and at least one side surface, and a reflector sublayer preformed on each of the top and bottom surfaces but not on the side surface of the reflector sublayer.

Preferred Materials: The reflector layer comprises a reflective material including aluminum, silver, copper, gold, platinum, tin, titanium, palladium, nickel, cobalt, rhodium, niobium, chromium, their combinations or their alloys. The reflector sublayer is preferably composed of aluminum and the support sublayer is composed of a silicon oxide. The coke flake section has the coating structure SiOx/Al/SiOx, where x is 1-2. The dielectric material is silicon dioxide, aluminum oxide, magnesium fluoride, aluminum fluoride, cerium fluoride, lanthanum fluoride, neodymium fluoride, samarium fluoride, barium fluoride, calcium fluoride, lithium fluoride or their combinations. It can be zinc sulfide, zinc oxide, zirconium oxide, titanium dioxide, carbon, indium oxide, indium-tin-oxide, tantalum pentoxide, cerium oxide, yttrium oxide, europium oxide, iron oxides, hafnium nitride, hafnium carbide, hafnium oxide, lanthanum oxide, magnesium oxide, neodymium oxide, praseodymium oxide, samarium oxide, antimony trioxide, silicon carbide, silicon nitride, silicon monoxide, selenium trioxide, tin oxide, tungsten trioxide, or their combinations. The first and second dielectric layers are composed of the same material. They are each composed of a dielectric optical stack having several alternating layers of a high index material and a low index material. They are each composed of a mixture or several sublayers of dielectric materials including low index materials, high index materials or their combinations. The first and second titanium-containing absorber layers comprise a material including elemental titanium, titanium-based compounds, titanium-based alloys or their combinations. They comprise an absorbing material including titanium, titanium nitride, titanium oxynitride, titanium carbide, titanium oxynitride carbide, titanium silicide, titanium diboride, titanium mixed with carbon, titanium mixed with tungsten, titanium mixed with silicon, titanium mixed with niobium or their combinations. The titanium-containing absorber layer has a discrete boundary interface with the underlying dielectric layer. It comprises an amorphous absorbing material. The pigment flake comprises a core layer comprising mica, glass, talc, iron oxide or boron nitride.

Preferred Properties: The reflector layer has a physical thickness of 200-1000 Angstrom. The first and second dielectric layers comprise a dielectric material having an index of refraction of about 1.65 or less. They have an optical thickness of 2 quarter wave optical thickness (QWOT) at a design wavelength of 400 nm to 9 QWOT at a design wavelength of 700 nm. They may have the same optical thickness. The dielectric optical stack has a gradient index of refraction. The first and second titanium-containing absorber layers each have a physical thickness of 30-300 Angstrom. They preferably have the same physical thickness. Each of the pigment flakes has a dimension on any surface of 2-200 mum.

POLYMERS - Preferred Material: The pigment medium comprises a material including acrylic melamine, urethanes, polyesters, vinyl resins, acrylates, methyl methacrylate, acrylonitrile butadiene styrene

resins, epoxies, styrenes, ink and paint formulations based on alkyd resins or their mixtures.

ABEX EXAMPLE - A color shifting powdered pigment was produced by coating a sol-gel based powder material with titanium nitride. Each of the pigment flakes had the coating structure TiNx/SiO2(sol-gel)/Al(sputtered)/SiO2(sol-gel)/TiNx. The pigment was drawn down into a pigment vehicle to form a film in which the pigment to vehicle weight ratio was 1:5. This film exhibited durability in water, acid, base and bleach (by measuring film samples on a DataColor spectrophotometer with D65 illumination and 10 degrees observation). The film samples were measured after 24 hours of immersion in water at 140 degreesF, after 30 minutes of immersion in 2 vol.% sulfuric acid, after 10 minutes of immersion in 2 wt.% sodium hydroxide, and after 10 minutes of immersion in 20 vol.% Clorox (RTM) bleach at room temperature. Color data measurements for these film samples showed excellent durability for the films.

FS CPI; GMPI; EPI

MC CPI: A08-E02; E31-G; E31-H05; E31-N04; E31-N05A; E31-P; E31-P02; E31-P03; E31-P05; E31-P06; E31-P06E; E31-Q03; E34-B; E34-C; E34-D; E34-E; E35; E35-K; E35-K02; G02-A03D; G02-A04B; G03-B04; L02-G; L03-H
EPI: T05-J

L134 ANSWER 37 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

AN 2002-370318 [40] WPIX Full-text

DNC C2002-104846 [40]

DNN N2002-289233 [40]

TI Composition for forming sol-gel catalyst for electroless plating, comprises metal alkoxide mixed with polar organic solvent, acid, chloride salt or acid chloride and catalytic metallic salt

DC E12; J04; L03; M13; P42; Q25

IN RAHE M R; STOLK R D

PA (MCDD-C) MCDONNELL DOUGLAS CORP

CYC 1

PI US 6344242 B1 20020205 (200240)* EN 6[0]
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ADT US 6344242 B1 US 1999-393413 19990910

PRAI US 1999-393413 19990910

IPCR B01J0013-00 [I,A]; B01J0013-00 [I,C]; C23C0018-00 [I,C]; C23C0018-12 [I,A]; C23C0018-18 [I,A]; C23C0018-18 [I,C]

EPC B01J0013-00B10; B01J0013-00B6; C23C0018-12; C23C0018-18

NCL NCLM 427/301.000
NCLS 106/001.110; 106/287.160; 106/287.170; 106/287.180; 244/117.00R; 427/098.500; 427/099.100; 427/099.500; 427/304.000; 427/314.000; 427/319.000; 427/320.000; 427/397.700; 427/402.000; 427/405.000; 427/429.000; 427/437.000; 427/443.100; 428/620.000; 516/099.000

AB US 6344242 B1 UPAB: 20050902
NOVELTY - A composition for forming a sol-gel catalyst comprises a metal alkoxide mixed with a polar organic solvent, 1-30 weight percent (weight%) of an acid, a chloride salt or an acid chloride and a catalytic metallic salt, where the metal is palladium, platinum, nickel, cobalt, gold and silver.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(i) formation of sol-gel catalyst composition which involves:

(a) preparing 30-50 weight% of a metal alkoxide mixture comprising metal alkoxide and polar-organic solvent;

(b) combining a portion of the metal alkoxide mixture with an acidic solution containing an acid dissolved in polar organic solvent and allowing the resulting mixture to hydrolyze and cool to room temperature to produce a stock solution for catalyst;

(c) preparing a metallic plating solution comprising 10-20 weight% of metallic plating solution of a chloride salt or an acid chloride, 30-40 weight% of the metallic plating solution of catalytic metallic salt, and

(d) combining a portion of the stock solution prepared with a portion of the metallic plating solution to produce a sol- gel catalyst composition for electroless plating; and

(ii) method for applying a metal coating to substrate which involves applying the sol-gel catalyst composition to substrate and heating the substrate to 100-500 degreesC for 10-60 minutes, and contacting the coated substrate with an electroless plating solution.

USE - For forming electroless plating compositions used in microcircuit industries such as circuit boards and other electrical components.

ADVANTAGE - The sol-gel catalyst composition strongly bonds to glass, polished alumina or ceramic surface and the catalytic metal. The composition may also be applied to other metallic substrates such as polished copper, tin, steel or alloys containing different components. The method of applying metal coating to substrate uses very low levels of catalytic metals. The method includes doping the sol- gel solutions before it is applied to the substrate. Multiple coatings may be applied to the substrate without the flaking usually associated with such coatings. The method eliminates numerous pre-conditioning steps, and therefore it is more efficient and cost effective.

TECH ORGANIC CHEMISTRY - Preferred Compounds: The polar organic solvent is chosen form lower monohydric alcohols, ketones, glycols and ethers, having boiling point of less than 100degreesC, preferably less than 200degreesC. The polar solvent is preferably isopropyl alcohol and the metal alkoxide is preferably TEOS. The lower monohydric alcohol is chosen from methyl, ethyl, isopropyl, n-propyl, n-butyl, sec-butyl and t-butyl.

INORGANIC CHEMISTRY - Preferred Compounds: The metal alkoxide mixture contains 31.3 ml of TEOS dissolved in 68.7 ml of isopropanol. The metallic plating solution comprises 0.4 g palladium nitrate and 0.19 g of sodium chloride dissolved in a solution comprising 1.3 ml of concentrated nitric acid and 5 ml of deionized water.

Preferred Process: The substrate applied with sol-gel catalyst composition is heated to 250-500 degreesC, preferably 300-400 degreesC for about 25-55 minutes, preferably 30-50 minutes. The substrate is preferably heated to 400 degreesC for 10 minutes or 300 degreesC for 30 minutes. The sol-gel catalyst composition is applied to the substrate by spraying, dipping, brushing, printing, silk-screening and lithographing. The sol -gel catalyst solution is preferably applied to the substrate by spin-coating at 3000 rpm for 20 seconds. The sol-gel catalyst coated substrate is placed in contact with the electroless plating solution for 30 minutes. The substrate is an electronic microcircuit or airplane part chosen from hatch, latch, wing, fin, flap, wall, and surface of airplane.

ABEX SPECIFIC MATERIALS - The chloride salt is sodium chloride.

SPECIFIC COMPOUNDS - The metal alkoxide is tetraethoxyorthosilicate (TEOS), tetramethoxyorthosilicate (TMOS), aluminum isopropoxide, titanium isopropoxide, zirconium isopropoxide, cerium isopropoxide, aluminum butoxide, titanium butoxide, zirconium butoxide, tin 2-ethylhexanoate, tantalum isopropoxide, tantalum ethoxide, indium methoxyethoxide, and cerium butoxide. The catalytic metallic salt is palladium nitrate and the acid is nitric acid.

EXAMPLE - 31.3 ml of TEOS was dissolved in 68.7 ml isopropanol to

form a solution (A). 2.6 ml of nitric acid was mixed with 9.6 ml of deionized water and the diluted acid was then mixed with 108 ml isopropyl alcohol to form a solution (B). 0.19 g sodium chloride was dissolved in 4.9 ml deionized water, to which 1.3 ml concentrated nitric acid was added. 0.4 g palladium nitrate was dissolved into this solution to form a clear, deep red colored solution (C).
Solution (A) was added to (B), and 30 volume parts of the resulting solution was added with 1 volume part of concentrated nitric acid. To the mixture obtained 1 volume part of solution (C) was added to form a clear brownish yellow colored solution. A glass microscope slide was spin coated with above solution at 3000 rpm for 20 seconds to form a transparent film on the slide. The slide was heated to 300 degreesC for 30 minutes or 400 degreesC for 10 minutes. The slide was contacted with an electroless cobalt plating solution and a metal film of 500 nm thickness was produced on the slide. The plating was smooth, shiny and adherent. The solution (A) was added to (B) and vigorously mixed. The resulting solution was aged overnight. 5 ml of isopropyl alcohol, 0.05 ml of hydrochloric acid and 0.5 ml of palladium stock solution (in nitric acid) were added to the resulting solution. The formed solution was found to have 0.736 ml of water, 0.011 M of palladium, 0.311 M of TEOS, 0.06 M of hydrochloric acid and 0.011 M of nitric acid. The glass microscope slide was spin coated with the solution for 20 seconds at 3000 rpm, dried in air and baked at 538 degreesC for 30 minutes. The slide was electroless nickel plated using Niposit 468 at 66 degreesC for 5 minutes. The plating was visually examined for coverage and plating thickness which were found to be 100% and 240 nm. A bright surface with one pinhole was obtained.

FS CPI; GMPI
MC CPI: E05-B03; E05-E03; E05-F02; E05-L01; E05-M; E05-N; E11-N; E31-H05; E33-B; E34-E; E35; E35-X; J04-E01; J04-E04; L03-H04E3; M13-B

L134 ANSWER 38 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 2001-191462 [19] WPIX Full-text
DNC C2001-057366 [19]
DNN N2001-136059 [19]
TI Electromagnetic radiation-based device for use in, e.g. detecting an analyte in a sample, has an electromagnetic radiation generating substrate with a chemical sensor
DC B04; J04; S03
IN BAKER G A; BRIGHT F V; DOODY M; DOODY M A; WENNER B; WENNER B R
PA (BAKE-I) BAKER G A; (BRIG-I) BRIGHT F V; (DOOD-I) DOODY M A; (UYNY-C) UNIV NEW YORK STATE RES FOUND; (WENN-I) WENNER B R
CYC 92
PI WO 2001009604 A1 20010208 (200119)* EN 48[19]
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AU 2000064999 A 20010219 (200129) EN
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US 6492182 B1 20021210 (200301) EN
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US 20030027353 A1 20030206 (200313) EN
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US 20030036205 A1 20030220 (200316) EN
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US 6582966 B2 20030624 (200343) EN
<--
US 6589438 B2 20030708 (200353) EN
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ADT WO 2001009604 A1 WO 2000-US20646 20000728; US 6492182 B1 Provisional US 1999-145856P 19990728; US 20030027353 A1

Provisional US 1999-145856P 19990728; US 20030036205 A1
Provisional US 1999-145856P 19990728; US 6582966 B2
Provisional US 1999-145856P 19990728; US 6589438 B2
Provisional US 1999-145856P 19990728; AU 2000064999 A
AU 2000-64999 20000728; US 6492182 B1 US 2000-628209 20000728; US 20030027353 A1 Div Ex US 2000-628209 20000728; US 20030036205 A1 Div Ex US 2000-628209 20000728; US 6582966 B2 Div Ex US 2000-628209 20000728; US 6589438 B2 Div Ex US 2000-628209 20000728; US 20030027353 A1 US 2002-254253 20020925; US 6582966 B2 US 2002-254253 20020925; US 20030036205 A1 US 2002-254254 20020925; US 6589438 B2 US 2002-254254 20020925

FDT US 20030027353 A1 Div ex US 6492182 B; US 20030036205 A1 Div ex US 6492182 B; US 6582966 B2 Div ex US 6492182 B; US 6589438 B2 Div ex US 6492182 B; AU 2000064999 A Based on WO 2001009604 A

PRAI US 1999-145856P 19990728
US 2000-628209 20000728
US 2002-254253 20020925
US 2002-254254 20020925

IPCR G01N0033-536 [I,C]; G01N0033-542 [I,A]; G01N0033-543 [I,A]; G01N0033-543 [I,C]

EPC G01N0033-542; G01N0033-543K2

NCL NCLM 436/165.000
NCLS 356/300.000; 356/317.000; 422/055.000; 422/082.050; 422/082.080; 422/082.090; 436/164.000; 436/165.000; 436/169.000; 436/171.000; 436/172.000; 436/527.000

AB WO 2001009604 A1 UPAB: 20060116

NOVELTY - A device for detecting the presence of at least one analyte in a sample.

DETAILED DESCRIPTION - The device (10) comprises:

(1) an electromagnetic radiation (ER) generating substrate (13);

(2) a protective layer in contact with the electromagnetic radiation generating substrate and having a wells formed in it; and

(3) a chemical sensor (28) positioned on the substrate for reactive contact with the analyte, and upon receiving radiation form the substrate, the chemical sensor emits ER. The radiation comprises a first set of one or more wavelengths when the analyte is present in the sample and a second different set of one or more wavelengths when the analyte is not present in the sample.

INDEPENDENT CLAIMS are also included for:

(A) making the detecting device described above, by forming a well (19) in the protective layer (16) that is in contact with the ER generating substrate, and placing the chemical sensor in the well; and

(B) detecting and quantifying the presence of an analyte in a sample, by employing the ER generating device described above.

USE - For use in detecting an analyte in a sample or in selective and simultaneous detection and quantification of analytes in a sample.

ADVANTAGE - The invention provides an ER-based sensor device that is simple and easy to make, and is more compact than existing devices. The placement of the chemical sensor directly on the ER generating substrate eliminates the need for optical fibers to carry the signal from the ER generator to the chemical sensor. This improves the efficiency of delivery of ER from the generator to the sensor, minimizes alignment problems, and lowers the necessary fluence from the generator that leads to the use of smaller or lower power generators.

DESCRIPTION OF DRAWINGS - The figure shows a schematic representation of a side view of the inventive detecting device.

ER-based device (10)
ER generating substrate (13)
Protective layer (16)
Well (19)

```
          Chemical sensor (28)
TECH INSTRUMENTATION AND TESTING - Preferred Device: The ER generating
     substrate is a light emitting diode. The device also has a receiving
     and interpreting system with a receiver for the ER emitted by the
     chemical sensor and an interpreter for the received ER. The receiver
     includes a filter for selectively passing ER, a charge coupled device,
     and a lens for focusing the ER on the charge coupled device. The
     interpreter includes a computer. The ER generating device also
     comprises a holding material for the chemical sensor in the well. The
     chemical sensor comprises a sensor element and an affinity molecule
     with a specific affinity for the analyte.
     INORGANIC CHEMISTRY - Preferred Material: The holding material is a
     sol-gel, or comprises tetramethylorthosilane. The
     sensor element is fluorophore, phosphore, or chromophore. The analyte
     is calcium ions.
     ORGANIC CHEMISTRY - Preferred Materials: The analyte can also be
     glucose or cholesterol.
FS   CPI; EPI
MC   CPI: B01-D02; B05-A01B; B10-A07; B11-C07B2; B11-C08C; B12-K04E;
          J04-B01A
     EPI: S03-E14H

L134 ANSWER 39 OF 76  WPIX COPYRIGHT 2008       THE THOMSON CORP on STN
AN   2001-112409 [12]   WPIX  Full-text
DNC  C2001-033438 [12]
TI   Use of colorless titanium dioxide colloidal preparations or
     its precursors for conservation of architectural structures and
     buildings, involves coating the preparation on cementitious,
     stone or marble products
DC   E32; L02; P42
IN   AMADELLI R; CASSAR L; PEPE C
PA   (ITAL-N) ITALCEMENTI FAB RIUNITE CEMENTI
CYC  93
PI   WO 2001000541   A1 20010104 (200112)* EN  22[0]
     <--
     AU 2000059765   A  20010131 (200124)  EN
     <--
     EP 1196359      A1 20020417 (200233)  EN
     <--
     IT 1312119      B  20020404 (200277)  IT
     <--
     US 6824826      B1 20041130 (200479)  EN
     <--
     EP 1196359      B1 20080319 (200822)  EN
ADT  WO 2001000541 A1 WO 2000-EP5724 20000621; IT 1312119 B
     IT 1999-MI1422 19990625; AU 2000059765 A AU 2000-59765
     20000621; EP 1196359 A1 EP 2000-945794 20000621; EP
     1196359 A1 WO 2000-EP5724 20000621; US 6824826 B1 WO
     2000-EP5724 20000621; US 6824826 B1 US 2002-30241
     20020411; EP 1196359 B1 EP 2000-945794 20000621; EP
     1196359 B1 WO 2000-EP5724 20000621; EP 1196359 B1 Related to
     EP 2008-100350 20080111
FDT  AU 2000059765   A Based on WO 2001000541   A; EP 1196359      A1 Based
     on WO 2001000541   A; US 6824826      B1 Based on WO 2001000541   A;
     EP 1196359      B1 Based on WO 2001000541   A
PRAI IT 1999-MI1422         19990625
IPCI C01G0023-00 [I,C]; C01G0023-053 [I,A]; C04B0041-45 [I,C]; C04B0041-50
     [I,A]
IPCR C01G0023-00 [I,C]; C01G0023-047 [I,A]; C01G0023-053 [I,A]; C04B0041-45
     [I,C]; C04B0041-50 [I,A]; C04B0041-60 [I,C]; C04B0041-65 [I,A]
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EPC C01G0023-047; C01G0023-053; C04B0041-50P46; C04B0041-65
ICO M01P0004:64; Y01N0006:00
NCL NCLM 427/258.000
NCLS 106/286.100; 106/286.400; 106/286.500; 106/286.800; 106/287.180; 106/287.190; 427/256.000; 427/269.000; 427/279.000; 427/283.000; 427/287.000; 427/294.000; 427/350.000; 427/372.200
AB WO 2001000541 A1 UPAB: 20060116

NOVELTY - Colorless titanium dioxide colloidal preparations or its precursors is coated on cementitious, stone and marble products, for conserving original appearance of the products.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(i) the preservation of original appearance of cementitious, stone or marble products;

(ii) a cementitious, stone or marble product coated with the preparation; and

(iii) preparation of colorless titanium dioxide colloidal preparation which involves hydrolyzing titanium dioxide directly in presence of salt of a metal ion by co-precipitation or mixing.

USE - For maintaining the original appearance of cementitious, stone or marble products (claimed) and thus conserving architectural structures, buildings and artefacts.

ADVANTAGE - The colloidal suspension (oxidant) maintains the original appearance of products by oxidizing deposits of organic pollutants generated as motor vehicle exhaust and industrial emission, and inorganic compounds such as nitrogen oxide, effectively (claimed). The suspension preserves the surface of product without altering its nature and excels in adhesion property.

TECH INORGANIC CHEMISTRY - Preferred Composition: The colloidal preparation contains 0.1-5%, preferably 0.1-1% (with respect to titanium) of metal ions.

The metal ion is chosen from groups I-IVA, lanthanide and actinide series of periodic table, preferably lithium, beryllium, magnesium, scandium, yttrium, lanthanum, cerium, niobium, vanadium and/or zirconium and more preferably magnesium, cerium, niobium and lanthanum.

Preferred Form: 75% or more of titanium dioxide exists in anatase form.

Titanium dioxide in colloidal form is prepared by using sol-gel technique to obtain particles with size 10-200 Angstrom, preferably 50-100 Angstrom.

Preferred Precursor: The precursor is $TiCl_4$ (titanium tetrachloride), $TiOSO_4$ (titanium sulfate) or titanium alkoxide and is a product which forms titanium dioxide in anatase form by appropriate types of thermal treatment.

Preferred Process: An aqueous suspension of the preparation is applied on the product in small amount until a coating film of desired thickness is formed on the product.

The colloidal suspension is vacuum dried to obtain a powder which can be re-suspended in water, maintaining its colloidal properties.

ABEX EXAMPLE - 750 ml of water and 5.2 ml of 65% concentrated nitric acid and 125 ml of titanium isopropoxide were added to a 1 liter beaker and heated at 80 degreesC for 8-12 hours with vigorous stirring. Isopropanol of the solution was evaporated and the volume of the reaction solution was made to 200 ml by adding water to obtain a preparation containing hydrolyzed titanium dioxide precursor. The hydrolyzed precursor was doped with cerium (III) nitrate hexahydrate (0.0277 g) to obtain a colloidal solution. 10 ml of the colloidal solution was placed in a hermetically sealed glass container for completely evaporating water and enabling regular growth of particles of size 50 Angstrom. The solution was then heated at 200-220 degreesC overnight. Specimens of cementitious mortar (25 x 8

x 2.5 cm) were prepared by using white cement Italbianco Italcementi 52.5 R and cured for 1 day in molds at 20 degreesC and 90% RH. The aqueous suspension was brush-applied on the cementitious mortar specimen until a preset thickness was formed. The specimen suspended in 3 ml of 4-chlorophenol (10 mM) was placed in an irradiation cell containing the colloidal preparation. A specimen prepared by using Degussa titanium dioxide was taken as standard. The cell was closed under oxygen and degradation of 4-chlorophenol was monitored by spectrophotometry. The degradation time (in hours) was measured and was found to be low for specimens containing the doped ions, compared with the standard specimen.

FS CPI; GMPI

MC CPI: E10-A09B6; E10-A25B2; E10-E02U; E10-J02B4; E11-Q02; E31-H01; E35-K01; E35-K02; E35-K04; L02-D07; L02-D14N; N01-A; N01-B; N03-A; N03-B01; N06-E

L134 ANSWER 40 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

AN 2002-029000 [04] WPIX Full-text

DNC C2002-008231 [04]

DNN N2002-022474 [04]

TI Treating agent for metals, contains metal alkoxide solution obtained by dispersing a component containing metal alkoxide in organic solvent

DC A82; E12; G02; M14; P42; P73

IN ITO H; UCHIGAKI T

PA (ISHT-C) ISHIZUKA GLASS KK

CYC 1

PI JP 2001192842 A 20010717 (200204)* JA 11[7]
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ADT JP 2001192842 A JP 2000-124495 20000425

PRAI JP 1999-314689 19991105

IPCR B05D0007-14 [I,A]; B05D0007-14 [I,C]; B05D0007-24 [I,A]; B05D0007-24 [I,C]; B32B0015-08 [I,A]; B32B0015-08 [I,C]; B32B0015-082 [I,A]; B32B0015-092 [I,A]; B32B0015-095 [I,A]; C09D0201-00 [I,A]; C09D0201-00 [I,C]; C09D0005-08 [I,A]; C09D0005-08 [I,C]; C23C0018-00 [I,C]; C23C0018-02 [I,A]; C23C0022-05 [I,C]; C23C0022-34 [I,A]; C23F0011-00 [I,A]; C23F0011-00 [I,C]

AB JP 2001192842 A UPAB: 20050524

NOVELTY - A metal treating agent contains metal alkoxide solution obtained by dispersing a component containing metal alkoxide in organic solvent.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(i) Metallic material with coating film which comprises a metal bulk coated with a metal treating agent; and

(ii) Metal resin composite molding body formed by molding a metallic material with coating film using a resin binder.

USE - For metal surface.

ADVANTAGE - The treating agent for metals modifies the metal surface. The treating agent provides chemical stability, rust proofing, corrosion resistance, shock resistance and wear resistance to the treated surface. Formation of nucleus which causes corrosion is suppressed.

TECH INORGANIC CHEMISTRY - Preferred Metals: The metal alkoxide contains one or more metals chosen from silicon, boron, aluminum, magnesium, zirconium or a transition metal. Preferred Substances: The metal alkoxide containing solution further contains a fluorine containing water repellent material and 1-10 weight% of a pigment which is an extender or a color pigment. The color pigment is an organic or inorganic pigment. The metal bulk comprises a metal powder bonded to resin. The metallic material with coating film contains metal powder coated with the metal treating

agent. The coating on metallic material is a rust-proof
coating formed by sol-gel process.
POLYMERS - Preferred Resin: The metal alkoxide solution contains 2 or more resin components selected from silicone resin, epoxy resin, urethane resin and acrylic resin. The water repellent material and/or resin component contained in the shape of powder are dissolved in the organic solvent or suspended as colloids in organic solvent.

ABEX EXAMPLE - 0.05 moles of tetra ethyl ortho silicate was added to 50 ml of ethanol (organic solvent) and metal alkoxide solution was obtained. Triethanolamine and 4 ml of ammonium hydroxide aqueous solution were added to the metal alkoxide aqueous solution as stabilizer and catalyst respectively. The solution was stirred for 1 hour at room temperature and sol-like precursor solution was obtained. 10 g of iron powder was added to 1.5 g of precursor solution and dried at room temperature. The mixture was baked for 10 minutes at 150degreesC. Iron powder carrying coating film was obtained. 1 g of the sample was put in a petri dish and water proof test was carried out by dropping 1 ml of distilled water. The petri dish was left for 24 hours at room temperature. The iron powder was tested for rust generation. The iron powder carrying coating film showed excellent rust-proof property.

FS CPI; GMPI

MC CPI: A12-B04; E05-B01; E05-B03; E05-C02; E05-E03; E05-L; E05-M; E05-N; E10-E04L2; G02-A05E; M14-F01

L134 ANSWER 41 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

AN 1999-326557 [27] WPIX Full-text

DNC C1999-096549 [27]

DNN N1999-244954 [27]

TI Electroconductive polymers are produced using two polymeric dopants of high and low molecular weight to improve conductivity and processability

DC A18; A26; A28; A32; A85; E14; G02; L03; X12

IN BABINEC S J; DRUMRIGHT R E; SEN A

PA (DOWC-C) DOW CHEM CO

CYC 24

PI WO 9919883 A1 19990422 (199927)* EN 29[0]
<--
EP 1027709 A1 20000816 (200040) EN
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CN 1276086 A 20001206 (200118) ZH
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US 6203727 B1 20010320 (200118) EN
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KR 2001031137 A 20010416 (200163) KO
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JP 2001520435 W 20011030 (200202) JA 48
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ADT WO 9919883 A1 WO 1998-US21661 19981014; US 6203727 B1 Provisional US 1997-62047P 19971015; CN 1276086 A CN 1998-810194 19981014; EP 1027709 A1 EP 1998-953480 19981014; US 6203727 B1 US 1998-172795 19981014; EP 1027709 A1 WO 1998-US21661 19981014; JP 2001520435 W WO 1998-US21661 19981014; JP 2001520435 W JP 2000-516356 19981014; KR 2001031137 A KR 2000-704034 20000414

FDT EP 1027709 A1 Based on WO 9919883 A; JP 2001520435 W Based on WO 9919883 A

PRAI US 1997-62047P 19971015
US 1998-172795 19981014

IC ICM H01B001-12

ICS C08G073-00; C08L079-00; H01B001-06
IPCR C08G0061-00 [I,C]; C08G0061-12 [I,A]; C08G0073-00 [I,A]; C08G0073-00 [I,C]; C08L0079-00 [I,A]; C08L0079-00 [I,C]; H01B0001-06 [I,A]; H01B0001-06 [I,C]; H01B0001-12 [I,A]; H01B0001-12 [I,C]
EPC C08G0061-12D; H01B0001-12H4; H01B0001-12H6
NCL NCLM 252/500.000
AB WO 1999019883 A1 UPAB: 20050704

NOVELTY - Conductive polymers are produced using combination of at least two dopants, one with relatively low molecular weight and another with relatively high molecular weight, of polymeric type.

DETAILED DESCRIPTION - Conductive polymer composition has conductivity at least 10-12 Siemens/cm (S/cm) and comprises intrinsically conductive polymer which is doped with at least two different dopants of which first has a molecular weight of less than 1000 and a second is polymeric and has a weight average molecular weight greater than 2000. First dopant is present in amount sufficient to increase the conductivity of composition relative to that of composition which is the same in all respects expect that the intrinsically conductive polymer has the same molar amount of available sites doped solely with the long-chain dopant. Preferably at least 1% of the polymer available sites are doped with each dopant. INDEPENDENT CLAIMS are also included for the following:

(a) a compatible mixture of at least one matrix material (1) selected from thermoplastic polymers, thermosetting polymers, latexes and sol gels, and preferably having Tg from -100degreesC to 300degreesC, with a doped intrinsically conductive polymer as claimed above (2) having higher electronic conductivity than material (1);

(b) an aqueous dispersion of a doped intrinsically conductive polymer;

(c) a solution or stable dispersion of 0.01-98 weight% of doped intrinsically conductive polymer in an organic solvent, selected from toluene, methyl-ethyl ketone, tetrahydrofuran, 1-24C alcohols. methylene chloride, methyl sulfoxide, N,N-dimethyl formamide and their mixtures;

(d) a solution or stable dispersion of 0.01-95 weight% of doped intrinsically conductive polymer in thermosetting resin selected from polyepoxides and polyurethanes;

(e) a process for preparing a doped intrinsically conductive polymer; and

(f) a method of making a conductive mixture comprising adding the conductive polymer composition as claimed to a solution of monomers and polymerizing the monomers to form a matrix polymer.

USE - Electroconductive polymers are used to produce composite articles or polymer blends for e.g. electrostatic painting applications, or to prepare water or organic solvent-based coatings, for coating metal substrates used in aerospace, automotive and marine field.

ADVANTAGE - The polymers have improved conductivity and processability.

TECH POLYMERS - Preferred Components: Intrinsically conductive polymer is preferably polyaniline, and the first dopant is sulfonic aldodecyl benzenesulfonic acid, or p-toluene sulfonic acid, or hydroxybenzenoic acid. Alternatively, the polymer is polythiophene, or it is polyethylene dioxythiophene, the second dopant is polystyrene sulfonic acid, and the first dopant is dodecyl benzenesulfonic, or p-toluene sulfonic, or hydroxybenzene sulfonic acid. Long-chain dopant is preferably a polymer having terminal or pendant of carbon-, phosphorus-, or sulfur- containing acid groups, their salts or esters, or their mixtures, or it is one of ethylene/(meth)acrylic acid copolymers, polyacrylic acids, carboxylic acid- or sulfonic acid-functional polystyrene, graft copolymers of polyethylene or polypropylene and acrylic acid or maleic anhydride or their mixtures, sulfonated ethylene-styrene copolymers, and polyvinyl sulfonic acid. Preferred Process: Doped intrinsically conductive polymer is prepared by:

(1) complexing aniline monomers to a second (polymeric) dopant to provide molar ratio of reactive sites of the aniline : dopant no greater than 1:1;
(2) adding an oxidant and polymerizing the monomers under conditions required to form polyaniline; and
(3) complexing the polymer with a first dopant used in amount sufficient to dope at least 1% of polymer's available sites.

ABEX EXAMPLE - Polyaniline doped with sulfonated polycarbonate was prepared by combining samples of end-capped sulfonated polycarbonates with average acid equivalent weights of 3,250 and 8,500, respectively, with separate samples of neutral (blue color) polyaniline and 3 wt.% PEPQ antioxidant in methylene chloride, sonicated at 50degreesC for 30 days, and evaporated, to give a green, clear film. The conductivity of film was estimated by measuring surface resistance with a multimeter having maximum measurable resistance 107 Ohms. Approximate spacing between electrodes was 1 cm. The material was found to have above 107 Ohms resistance and the color change of polyaniline from neutral blue to green indicated that the sulfonated polycarbonates have doped polyaniline and increased its conductivity in comparison with initial non-doped blue state.

FS CPI; EPI

MC CPI: A09-A03; A10-E; E10-A09B4; E10-A09B7; G02-A02B; G02-A05; L03-A02D
EPI: X12-D01C

L134 ANSWER 42 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

AN 1999-076666 [07] WPIX Full-text

DNC C1999-023294 [07]

TI Liquid coating composition giving metal oxide film with good water and alkali resistance - obtained by adding N-methylolated melamine condensate to metal alkoxide colloidal dispersion obtained by hydrolysis condensation

DC A82; G02

IN SAKASHITA Y

PA (TSAN-C) TEIKOKU KAGAKU SANGYO KK

CYC 1

PI JP 10316928 A 19981202 (199907)* JA 7[0]
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ADT JP 10316928 A JP 1997-163219 19970517

PRAI JP 1997-163219 19970517

IPCR C01B0013-32 [I,A]; C01B0013-32 [I,C]; C09D0161-20 [I,C]; C09D0161-28 [I,A]

AB JP 10316928 A UPAB: 20050520
An coating liquid compsn. is obtd. by adding (A) an initial condensate of N-methylolated melamine to (B) a colloidal dispersion (sol-gel) of a metal alkoxide or its oligomer obtd. by hydrolysis-polycondensation in a polar solvent.

USE - Used in coating inorganic material (e.g. glass, metal, and china and potteries).

ADVANTAGE - The compsn. provides the base material surface with a metal oxide coat film of excellent water and alkali resistance, protecting it from fouling and offering colours, electrical conductivity and heat reflectivity.

ABDT JP10316928
An coating liquid compsn. is obtd. by adding (A) an initial condensate of N-methylolated melamine to (B) a colloidal dispersion (sol-gel) of a metal alkoxide or its oligomer obtd. by hydrolysis-polycondensation in a polar solvent.
USE
Used in coating inorganic material (e.g. glass, metal, and china and potteries).

ADVANTAGE
The compsn. provides the base material surface with a metal oxide coat film of excellent water and alkali resistance, protecting it from fouling and offering colours, electrical conductivity and heat reflectivity.
PREFERRED COMPSN.
The amount of (A) added is at least 30 weight % to the metal oxide conversion weight in the metal alkoxide polycondensate. The compsn. may be obtd. by adding (A) to a colloidal dispersion of alkoxysilane or its oligomer in a polar solvent. The alkoxysilane or its oligomer contains phenyl trialkoxysilane.
FS CPI
MC CPI: A06-A00A; A06-A00E1; A06-D; A10-D; A12-B01C; G02-A01; G02-A01A

L134 ANSWER 43 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 1998-476908 [41] WPIX Full-text
DNC C1998-144123 [41]
TI Colouring composition for glass or metal surfaces - comprises sol-gel of polycondensate of phenyl:tri:alkoxy:silane(s), co:polycondensate(s) of it and/or its oligomer and metal alkoxide(s) or its oligomer(s); and colouring material
DC A26; G02; L01; M13
IN SAKASHITA Y
PA (TSAN-C) TEIKOKU KAGAKU SANGYO KK
CYC 1
PI JP 10204296 A 19980804 (199841)* JA 6[0]
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ADT JP 10204296 A JP 1997-41356 19970120
PRAI JP 1997-41356 19970120
IPCR C08K0005-00 [I,A]; C08K0005-00 [I,C]; C08L0083-00 [I,C]; C08L0083-04 [I,A]
AB JP 10204296 A UPAB: 20050522
Colouring compsn.(I) comprises: (A) sol- gel solution composed of polycondensate (A1) of phenyltrialkoxysilane(s) (a1), copolycondensate(s) (A2) of (a1) and/or its oligomer (a2) and metal alkoxide(s) (b1) or its oligomer(s)(b2) and (B) colouring material.
USE - (I) is useful as colouring compsn. for inorganic metal surface, colouring layer and/or UV or infrared absorbing layer is formed readily.
ADVANTAGE - (I) does not contain toxic heavy metal, (I) gives coating layer having good water resisting properties. (I) is decomposed to colourless substance in fusing inorganic material, inorganic material(e.g. glass) coloured by (I) is generated to colourless material which is used repeatedly. ABDT JP10204296
Colouring compsn.(I) comprises: (A) sol-gel solution composed of polycondensate (A1) of phenyltrialkoxysilane(s) (a1), copolycondensate(s) (A2) of (a1) and/or its oligomer (a2) and metal alkoxide(s) (b1) or its oligomer(s)(b2) and (B) colouring material.
USE
(I) is useful as colouring compsn. for inorganic metal surface, colouring layer and/or UV or infrared absorbing layer is formed readily.
ADVANTAGE
(I) does not contain toxic heavy metal, (I) gives coating layer having good water resisting properties. (I) is decomposed to colourless substance in fusing inorganic material, inorganic material(e.g. glass) coloured by (I) is generated to colourless material which is used repeatedly.
EXAMPLE
A compsn. of phenyltrimethoxysilane 39.7 g, isopropanol 51.1 g and 60

% nitric acid 0.2 g and water 9.0 g was stirred at room temperature for 8 h to obtain sol-gel solution. The sol-gel solution 60 g and 2.5 wt% C.I. pigment green 7(RTM) isopropanol dispersion 140 g and isopropanol 100 g were blended to obtain green (I).
EMBODIMENT
Various organic pigments and dyes are used as (B). (I) is coated on glass surface, heated at a temperature above 200°C below decomposition temperature of (B) to form colour layer.
PREFERRED MATERIALS
(a1) is phenyltri(m)ethoxysilane, (I) contains (a1) and/or (a2) 30 wt% or more. (b1) is alkoxysilane(s), (B) is organic cpd(s). to be deteriorated to colourless substance(s) at a temperature above m. pt. of glass.
FS CPI
MC CPI: A06-A00E1; A12-B01C; G02-A01A; L01-G04; L01-G09; M13-H05

L134 ANSWER 44 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 1998-543666 [47] WPIX Full-text
DNC C1998-163387 [47]
DNN N1998-423229 [47]
TI Coating metal with flexible, corrosion-inhibiting, clear vitreous film resistant to weathering, scratching and soiling - uses composition obtained by hydrolysis and polycondensation of silane or oligomer in presence of silica nano-particles and/or alkali and baking
DC E11; L01; M13; P27; P28; P42; Q47
IN JONSCHKER G; MENNIG M; SCHMIDT H; MENNING M
PA (NEUE-N) INST NEUE MATERIALIEN GEMEINNUETZIGE; (NEUE-N) INST NEUE MATERIALIEN GEMEINNUETZIGE GMB; (LEIB-N) LEIBNIZ INST NEUE MATERIALIEN GEMEINNUET
CYC 80

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	WO 9845502	A1	19981015	(199847)	DE	
	<--					
	AU 9875234	A	19981030	(199911)	EN	
	<--					
	EP 973958	A1	20000126	(200010)	DE	
	<--					
	CZ 9902870	A3	20000412	(200026)	CS	
	<--					
	CN 1252107	A	20000503	(200036)	ZH	
	<--					
	HU 2000001688	A2	20000928	(200062)	HU	
	<--					
	US 6162498	A	20001219	(200102)	EN	
	<--					
	KR 2000070956	A	20001125	(200131)	KO	
	<--					
	JP 2001518979	W	20011016	(200176)	JA	20
	<--					
	EP 1284307	A1	20030219	(200321)	DE	
	<--					
	EP 973958	B1	20030702	(200345)	DE	
	<--					
	DE 59808913	G	20030807	(200359)	DE	
	<--					
	ES 2202854	T3	20040401	(200425)	ES	
	<--					
	CZ 294830	B6	20050316	(200522)	CS	

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     CN 1168850      C  20040929 (200615)  ZH
     <--
     EP 1284307      B1 20060927 (200663)  DE
     DE 59813747     G  20061109 (200675)  DE
     ES 2271175      T3 20070416 (200728)  ES
ADT  DE 19714949 A1 DE 1997-19714949 19970410; AU 9875234 A
     AU 1998-72534 19980409; CN 1252107 A CN 1998-804041
     19980409; CN 1168850 C CN 1998-804041 19980409; DE
     59808913 G DE 1998-508913 19980409; DE 59813747 G DE
     1998-513747 19980409; EP 973958 A1 EP 1998-922674
     19980409; EP 1284307 A1 Div Ex EP 1998-922674 19980409;
     EP 973958 B1 EP 1998-922674 19980409; DE 59808913 G EP
     1998-922674 19980409; ES 2202854 T3 EP 1998-922674
     19980409; JP 2001518979 W JP 1998-542401 19980409; WO
     9845502 A1 WO 1998-EP2076 19980409; EP 973958 A1 WO
     1998-EP2076 19980409; CZ 9902870 A3 WO 1998-EP2076
     19980409; HU 2000001688 A2 WO 1998-EP2076 19980409; US
     6162498 A WO 1998-EP2076 19980409; KR 2000070956 A WO
     1998-EP2076 19980409; JP 2001518979 W WO 1998-EP2076
     19980409; EP 973958 B1 WO 1998-EP2076 19980409; DE
     59808913 G WO 1998-EP2076 19980409; CZ 294830 B6 WO
     1998-EP2076 19980409; EP 1284307 B1 Div Ex EP 1998-922674
     19981015; CZ 9902870 A3 CZ 1999-2870 19980409; CZ
     294830 B6 CZ 1999-2870 19980409; KR 2000070956 A KR
     1999-707221 19990810; US 6162498 A US 1999-402742
     19991008; HU 2000001688 A2 HU 2000-1688 19980409; EP
     1284307 A1 EP 2002-25558 19980409; EP 973958 B1 Related to
     EP 2002-25558 19980409; EP 1284307 B1 EP 2002-25558
     19980409; DE 59813747 G EP 2002-25558 19980409; ES
     2271175 T3 EP 2002-25558 19980409
FDT  CZ 294830       B6 Previous Publ CZ 9902870      A; EP 973958       B1
     Related to EP 1284307      A; DE 59813747     G Based on EP 1284307
     A; EP 1284307      A1 Div ex EP 973958       A; DE 59808913     G
     Based on EP 973958       A; ES 2202854      T3 Based on EP 973958
     A; EP 1284307      B1 Div ex EP 973958       A; AU 9875234      A
     Based on WO 9845502      A; EP 973958       A1 Based on WO 9845502
     A; CZ 9902870      A3 Based on WO 9845502      A; HU 2000001688   A2
     Based on WO 9845502      A; US 6162498      A Based on WO 9845502
     A; KR 2000070956   A Based on WO 9845502      A; JP 2001518979   W
     Based on WO 9845502      A; EP 973958       B1 Based on WO 9845502
     A; DE 59808913     G Based on WO 9845502      A; CZ 294830       B6
     Based on WO 9845502      A; ES 2271175      T3 Based on EP 1284307
     A
PRAI DE 1997-19714949     19970410
IC   ICM C23C018-12
IPCI C03C0001-00 [I,A]; C03C0001-00 [I,A]; C03C0001-00 [I,C]; C23C0018-00
     [I,C]; C23C0018-00 [I,C]; C23C0018-12 [I,A]; C23C0018-12 [I,A]
IPCR C03C0001-00 [I,A]; C03C0001-00 [I,C]; C23C0018-00 [I,C]; C23C0018-12
     [I,A]
EPC  C03C0001-00D4; C23C0018-12
ICO  M03C0207:00; M03C0207:04; M03C0207:08
NCL  NCLM  427/226.000
     NCLS  427/359.000; 427/397.700; 427/402.000
AB    DE 19714949 A1   UPAB: 20060114
      Production of a vitreous coating on a metallic surface comprises (1) coating
      with a composition obtained by hydrolysis and polycondensation of silane(s) of
      formula RnSiX4-n (I) or their oligomer(s) in the presence of (a) silica (SiO2)
      nano-particles and/or (b) alkali(ne earth) (hydr)oxide(s); and (2) thermal
      consolidation to a vitreous coating; in which X = a hydrolysable group or
      hydroxyl (OH); R = hydrogen (H), an alkyl, alkenyl or alkynyl group with ≤ 12
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carbon (C) atoms or a 6-10C aryl, aralkyl or alkaryl group; n = 0, 1 or 2. Also claimed are articles with a vitreous coating of this type on a metallic surface.

USE - The process is used for coating aluminium, tin, zinc, chromium, nickel or alloys, especially (stainless) steel, brass or bronze, especially sheet metal, tableware, cooking vessels, castings or door and window handles (all claimed).

ADVANTAGE - Vitreous coatings e.g. on steel are usually produced by enamelling. The usual glass system, which contains lead and has a relatively high alkali content, has inadequate resistance to chemicals and the enamel, which must usually be > 50 µm thick, is inflexible and brittle and tends to flake off. Chromium oxide interference films are not scratch-proof and very sensitive to soiling and fingerprints. Existing coatings produced by the sol-gel technique are too thin (<< 1 µm) to ensure the required mechanical and chemical protection. The present organically modified system based on SiO_2 can be applied in thickness ≤ 10 µm without cracking during drying and consolidation and is converted to compact SiO_2 films at relatively low temperatures (from 400°C). The films are generally 3-5 µm thick and give a hermetic seal, which (largely) prevents oxygen reaching the metal surface and ensures excellent protection from corrosion. ABDT DE19714949

Production of a vitreous coating on a metallic surface comprises (1) coating with a composition obtained by hydrolysis and polycondensation of silane(s) of formula R_nSiX_{4-n} (I) or their oligomer(s) in the presence of (a) silica (SiO_2) nano-particles and/or (b) alkali(ne earth) (hydr)oxide(s); and (2) thermal consolidation to a vitreous coating;
X = a hydrolysable group or hydroxyl (OH);
R = hydrogen (H), an alkyl, alkenyl or alkynyl group with ≤ 12 carbon (C) atoms or a 6-10C aryl, aralkyl or alkaryl group;
n = 0, 1 or 2.
Also claimed are articles with a vitreous coating of this type on a metallic surface.

USE

The process is used for coating aluminium, tin, zinc, chromium, nickel or alloys, especially (stainless) steel, brass or bronze, especially sheet metal, tableware, cooking vessels, castings or door and window handles (all claimed).

ADVANTAGE

Vitreous coatings e.g. on steel are usually produced by enamelling. The usual glass system, which contains lead and has a relatively high alkali content, has inadequate resistance to chemicals and the enamel, which must usually be > 50 µm thick, is inflexible and brittle and tends to flake off. Chromium oxide interference films are not scratch-proof and very sensitive to soiling and fingerprints. Existing coatings produced by the sol-gel technique are too thin (<< 1 µm) to ensure the required mechanical and chemical protection. The present organically modified system based on SiO_2 can be applied in thickness ≤ 10 µm without cracking during drying and consolidation and is converted to compact SiO_2 films at relatively low temperatures (from 400°C). The films are generally 3-5 µm thick and give a hermetic seal, which (largely) prevents oxygen reaching the metal surface and ensures excellent protection from corrosion.

MORE SPECIFICALLY

The average value of n = 0.2-1.5, especially 0.5-1.0;
X = alkoxy, especially 1-4C alkoxy, more especially (m)ethoxy;
R = 1-4C alkyl, especially (m)ethyl, or phenyl. In particular, (I) is a combination of (m)ethyltri(m)ethoxysilane and tetra(m)ethoxysilane and/or at least one of the silanes (I) has a fluorinated R group.

EXAMPLE

(1 and 4) 15 g silica sol ('Bayer-Kieselsol' type 300, TM; 30 weight%; concentrated to 45 weight%) were stirred into a mixture of 20 ml methyltriethoxysilane and 6 ml tetraethoxysilane. After an emulsion had formed (about 20 seconds), 0.3 ml concentrated phosphoric acid was added to start hydrolysis. The mixture remained turbid for 20-60 seconds, then suddenly became first viscous, then fluid and clear. The temperature of the sol rose to about 40°C during reaction.
After cooling room temperature, the sol was passed through 5 µm and 0.8 µm filtered. It could then be adjusted to the required viscosity e.g. with ethanol, propanol or alcohol mixtures and remained suitable for coating for X226E 6 hours. Clean stainless steel 1.3401, brass and aluminium substrates were dip coated in the sol at a rate of 4-6 mm/s and dried for 10 minutes at room temperature and 1 hour at 80°C. Consolidation involved heating in air (under nitrogen for stainless steel) at 1 K/minute and holding at 500°C (400°C for aluminium) for 1 hour. Flawless, 2-4 µm thick films were obtained. The stainless steel was not corroded during consolidation or after 1000 hours in the salt spray test. The coated brass and aluminium were completely free from corrosion after 3000 hours in the salt spray test, whereas uncoated parts corroded completely.
(CM)
PREFERRED COMPOSITION
In variant (a), the ratio of all silicon (Si) atoms in (I) to all Si atoms in the SiO2 nano-particles is 5:1 to 1:2, especially (4-2):1. Variant (b) uses (hydr)oxide(s) of lithium (Li), sodium (Na), potassium (K), magnesium (Mg), calcium (Ca) and/or barium (Ba), especially sodium hydroxide (NaOH) or potassium hydroxide (KOH). The Si:alkali metal atomic ratio is (20-5):1, especially (15-10):1.
PREFERRED METHOD
The coating is dried before thermal consolidation at temperatures of X226E 400°C, especially X226E 500°C to a film thickness of 1-10, especially 2-7 µm. After drying or thermal consolidation, other composition(s) giving a coloured vitreous coating may be applied and consolidated thermally.

FS CPI; GMPI
MC CPI: E05-E; E31-P03; E31-P06; E33; E34-B; E34-D; L01-H06; M13-J02

L134 ANSWER 45 OF 76 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN
AN 1997-363520 [33] WPIX Full-text
DNC C1997-116501 [33]
DNN N1997-302232 [33]
TI Organically functionalised nano-particle preparation, used in thin films, photography, catalysis and nano-electronic devices - by mixing metal precursor with organic surface passivant and reducing to produce free metal, with organic surface passivant bound to surface
DC A18; A25; A60; E19; G06; H04; J04; L03; M22; P53; P73; U12; V02; X12
IN HEATH J R; LEFF D V
PA (HEAT-I) HEATH J R; (LEFF-I) LEFF D V; (REGC-C) UNIV CALIFORNIA
CYC 21
PI WO 9724224 A1 19970710 (199733)* EN 35[0]
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AU 9717433 A 19970728 (199746) EN
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EP 914244 A1 19990512 (199923) EN
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JP 2000504374 W 20000411 (200029) JA 41
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US 6103868 A 20000815 (200041) EN
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ADT WO 9724224 A1 WO 1996-US20402 19961227; EP 914244 A1 EP 1996-945950 19961227; EP 914244 A1 WO 1996-US20402 19961227; JP 2000504374 W WO 1996-US20402 19961227; US 6103868 A WO 1996-US20402 19961227; AU 9717433 A AU 1997-17433 19961227; JP 2000504374 W JP 1997-523903 19961227; US 6103868 A US 1998-91389 19980618
FDT AU 9717433 A Based on WO 9724224 A; EP 914244 A1 Based on WO 9724224 A; JP 2000504374 W Based on WO 9724224 A; US 6103868 A Based on WO 9724224 A
PRAI US 1995-9721P 19951228
US 1998-91389 19980618
IC ICM B22F009-24
IPCR B01J0031-26 [I,C]; B01J0031-28 [I,A]; B01J0035-00 [I,A]; B01J0035-00 [I,C]; B01J0037-00 [I,C]; B01J0037-03 [I,A]; B22F0001-00 [I,A]; B22F0001-00 [I,C]; B22F0001-02 [I,A]; B22F0001-02 [I,C]; B22F0009-16 [I,C]; B22F0009-24 [I,A]; C07B0061-00 [I,A]; C07B0061-00 [I,C]; C07C0005-00 [I,C]; C07C0005-03 [I,A]; C07C0009-00 [I,C]; C07C0009-14 [I,A]; C30B0007-00 [I,A]; C30B0007-00 [I,C]
EPC B01J0035-00C; B01J0037-03B; B22F0001-00A2B4; B22F0001-00A2B4D; B22F0001-00A4C; B22F0009-24; C30B0007-00+29/02; C30B0007-00+29/60D
ICO L22F0998:00+B22F1/00A2B4D; L22F0998:00+B22F1/00A4C; Y01N0006:00
NCL NCLM 528/482.000
NCLS 075/331.000; 075/332.000; 427/212.000; 428/402.000; 528/491.000

AB WO 1997024224 A1 UPAB: 20060113

A method of preparing organically functionalised nanoparticles of metals and alloys, having a particle diameter of 10-200Å comprises: (a) providing a solution or dispersion of a metal precursor; (b) providing a solution of an organic surface passivant; (c) mixing the metal precursor with the organic surface passivant; (d) reacting the resulting mixture with a reducing agent to reduce the metal precursor to free metal, while at the same time binding the organic surface passivant to the resulting free metal surface. Also claimed are: (A) the organically functionalised nanoparticles: (B) preparation of a metal or alloy nanoparticle-doped matrix; and (C) a process for making a catalyst for converting 1-hexene to hexane.

USE - The materials are useful in metal-doped matrices, e.g. metal-doped polymer films having unique combinations of mechanical, dielectric, optical, electric, and magnetic properties for providing silver particles for use in reprography, e.g. in photography, to provide uniform film quality and enhanced resolution, in chemical catalysis, eg. for petroleum cracking or polymer synthesis, and as functional units in micro- and nano-electronic devices.

ADVANTAGE - The product crystallites have well-defined surface compositions, narrow size distribution, and uniform shapes. The materials are soluble in various organic media, including organic solutions containing dissolved polymers, they are stable as powders or monodisperse (non-aggregated) colloids under ambient conditions for more than several days, and they are stable for months when stored under low temperature conditions as powders or monodisperse (non-aggregated) colloids in solution. The products can exit as monodisperse entities (when prepared as organic colloids) which can be readily separated into a narrow size, and they can be prepared in greater than gram quantities.

ABDT WO9724224

A method of preparing organically functionalised nanoparticles of metals and alloys, having a particle diameter of 10-200Å comprises:
(a) providing a solution or dispersion of a metal precursor;
(b) providing a solution of an organic surface passivant;
(c) mixing the metal precursor with the organic surface passivant;
(d) reacting the resulting mixture with a reducing agent to reduce the metal precursor to free metal, while at the same time binding the

organic surface passivant to the resulting free metal surface.

Also claimed are: (A) the organically functionalised nanoparticles: (B) preparation of a metal or alloy nanoparticle-doped matrix; and (C) a process for making a catalyst for converting 1-hexene to hexane.

USE

The materials are useful in metal-doped matrices, e.g. metal-doped polymer films having unique combinations of mechanical, dielectric, optical, electric, and magnetic properties for providing silver particles for use in reprography, e.g. in photography, to provide uniform film quality and enhanced resolution, in chemical catalysis, eg. for petroleum cracking or polymer synthesis, and as functional units in micro- and nano-electronic devices.

ADVANTAGE

The product crystallites have well-defined surface compositions, narrow size distribution, and uniform shapes. The materials are soluble in various organic media, including organic solutions containing dissolved polymers, they are stable as powders or monodisperse (non-aggregated) colloids under ambient conditions for more than several days, and they are stable for months when stored under low temperature conditions as powders or monodisperse (non-aggregated) colloids in solution. The products can exit as monodisperse entities (when prepared as organic colloids) which can be readily separated into a narrow size, and they can be prepared in greater than gram quantities.

CLAIMED PROCESS

Process (A), preparing a metal or alloy nanoparticle-doped matrix, comprises: (1) providing organically functionalised metal or alloy particles, prepared as above; (2) providing a matrix; and (3) combining the organically functionalised metal or alloy particles with the matrix.

Process (B), for converting 1-hexene to hexane, comprises reacting 1-hexene with hydrogen in the presence of a catalyst prepared by: (I) providing a solution of a Pt or Pd salt; (II) mixing the Pt or Pd salt solution with an organic solution of a phase transfer agent; (III) providing a solution of an amine surface passivant, chosen from dodecylamine, octadecylamine, and pyridine; (IV) mixing the organic phase resulting from step (II) with the amine surface passivant solution; and (V) reacting the mixture of step (IV) with a reducing agent, to reduce the Pt or Pd salt, to free Pt or Pd, while binding the amine surface passivant to the free Pt or Pd surface.

EXAMPLE

(a) 150mg HAuC4.3H2O were dissolved by stirring in 25 ml deionised water to give a clear, yellow solution;

(b) 0.365g N(C8H17)4Br(3) were dissolved in 25 ml toluene to form a clear solution and then added to a rapidly-stirred solution (a), an immediate two-layer separation resulted, with an orange/red organic phase on top, and an orange-tinted aqueous phase on the bottom, the mixture was vigorously stirred until all colour disappeared from the aqueous phase, indicating quantitative transfer of the AuCl4 moiety into the organic phase;

(c) 0.019g C10H21SH in 25 ml toluene was added to the rapidly stirring two-phase mixture from (b);

(d) 0.151g NaBH4 was dissolved in 25 ml deionised water to form an effervescent, cloudy solution which was then added to the rapidly stirring mixture from (c).

There was an instant colour change of the organic phase to black/brown and then quickly (1 minute) to dark purple. After 10 minutes, the aqueous layer became clear and colourless. The reaction was continued at ambient temperature and pressure (12

hours/rapid stirring). The aqueous phase was then separated and discarded, and the dark purple organic phase evaporated and worked up to yield 40 mg of dry product.
The resulting nanoparticles were finally either stored as a powder in the freeze or at room temperature, or they were re-dissolved in a preferred amount of an organic solvent (e.g. hexane, toluene, chloroform) to form solutions with concentrations of 1-30 mg/ml. These solutions were either stored frozen, or at room temperature. (MHP)
PREFERRED METHOD
The method additionally comprises: (e) providing an organic solution of a phase transfer agent; and (f) mixing the phase transfer agent with the metal precursor prior to mixing with the organic surface passivant.
PREFERRED MATERIALS
The metal precursor contains one or more metal atoms, preferably an alkali(ne earth) metal, or a transition metal, especially gold, silver, platinum, palladium and/or cobalt, or a Group III metal atom, preferably boron, aluminium, gallium, indium or thallium, especially lead. The phase transfer agent compound contains both polar and non-polar functionality and has the ability to form micelles or inverted micelles. The phase transfer agent is preferably an amphiphilic compound, especially an alcohol, ether, ester, fatty acid, phospholipid, polyphosphate ester, polyether, alkylammonium salt, tetralkylboron alkali metal compounds, alkali metal soaps or detergents or nitrogen-containing aromatic compounds, or a zwitterion compound.
The organic surface passivant is a compound of formula R-X (where, R = alkyl, aryl, alkynyl or alkenyl; and X = a group which can bond to the free metal surface by strong or week interactions), or is a thiol, (oxy)phosphine, disulphide, amine, oxide or amide. The reducing agent is sodium borohydrate, sodium cyanoborohydrate, sodium cirate, lithium aluminium borohydrate, K or NaK. The matrix is a polymer solution, preferably polystyrene, polymethylmethacryalte, polyethers, polypropylene, and polyethylene, or a sol-gel, preferably alumina, or glassy carbon. The polymer solution and the functionalised metal or metal alloy particles are combined by spin coating. The solvent in the polymer solution is an alcohol, ketone, ether, chloroform, TCE or dichloromethane.

FS CPI; GMPI; EPI
MC CPI: A10-E01; E10-J02D3; G06-E; G06-F01; H04-B02; H04-E08; H04-F02B; H04-F02E; J04-E04; L03-D; L04-X; M22-H01; N01; N02; N03-G; N05-D; N05-E
EPI: U12-B03X; V02-A; X12-E02

L134 ANSWER 46 OF 76 WPIX
AN 1998-002739 [01] WPIX Full-text
DNC C1998-001034 [01]
TI Pigments for coloured cosmetics - comprise inorganic materials having smooth surface or in spherical form covered with metal oxide gel
DC D21; E37
IN DOMICHI T; MAKITA K
PA (MORI-I) MORI S
CYC 1
PI JP 09227114 A 19970902 (199801)* JA 6[0]
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ADT JP 09227114 A JP 1996-78458 19960222
PRAI JP 1996-78458 19960222
IPCR A61K0008-19 [I,A]; A61K0008-19 [I,C]; A61K0008-26 [I,A]; A61K0008-27

[I,A]; A61K0008-30 [I,A]; A61K0008-30 [I,C]; A61Q0001-00 [I,A]; A61Q0001-00 [I,C]; A61Q0001-02 [I,A]; A61Q0001-02 [I,C]; A61Q0001-04 [I,A]; A61Q0001-10 [I,A]; A61Q0001-12 [I,A]; A61Q0001-12 [I,C]; C01B0033-00 [I,C]; C01B0033-149 [I,A]

AB JP 09227114 A UPAB: 20060113

Pigments for coloured cosmetics comprise inorganic materials having smooth surface or in spherical form covered with a metal oxide gel, particularly prepared by sol-gel method from a starting solution of metal alkoxide, pigment, water, alcohol and alkali.

Inorganic materials (e.g. titanium dioxide, iron oxides, zinc oxide, ultramarine and mica) of 1-100 (preferably 10-30) μm, or 0.1-30 μm for spherical materials are preferably covered with metal oxide gel (e.g. silicon tetraalkoxides, Ti tetraalkoxide or Al trialkoxides) containing inorganic or organic pigment (e.g. iron oxides, Al silicate or lake colours) in amounts of 0.01-20 (preferably 3-10) weight% and at a thickness of ≥ 0.05 μm.

ADVANTAGE - Cosmetics have no direct contact of pigment with skin to avoid irritation and allergic dermatitis. Pigment enclosed in metal oxide gel gives natural feeling without colour change due to sweat or sebum.

ABDT JP9227114

Pigments for coloured cosmetics comprise inorganic materials having smooth surface or in spherical form covered with a metal oxide gel, particularly prepared by sol-gel method from a starting solution of metal alkoxide, pigment, water, alcohol and alkali.

ADVANTAGE

Cosmetics have no direct contact of pigment with skin to avoid irritation and allergic dermatitis. Pigment enclosed in metal oxide gel gives natural feeling without colour change due to sweat or sebum.

EXAMPLE

A mixture of 25.0 pts. weight of iron red, 4.0 pts. weight of ethylcellulose and 71.0 pts. weight of i-PrOH was thoroughly dispersed to give a pigment dispersed mixture. A mixture of 5.2 g of Si(OEt)4, 62.7g of i-PrOH, 1.1 g of water, 1.0 g of HN(C2H4OH)2 and 5.0 g of the above prepared pigment dispersed mixture was stirred at room temperature for 2 hours to give 75.0 g of the coating solution.

Whole coating solution (75.0 g) and 25.0 g of mica was thoroughly mixed and gradually heated to 60°C, dried and heated at 150°C for 1 hour to give iron red treated mica. The product was used to prepare face powder, foundation and lipstick.

PREFERRED MATERIALS

Inorganic materials (e.g. titanium dioxide, iron oxides, zinc oxide, ultramarine and mica) of 1-100 (preferably 10-30) μm, or 0.1-30 μm for spherical materials are covered with metal oxide gel (e.g. silicon tetraalkoxides, Ti tetraalkoxide or Al trialkoxides) containing inorganic or organic pigment (e.g. iron oxides, Al silicate or lake colours) in amounts of 0.01-20 (preferably 3-10) weight% and at a thickness of ≥ 0.05 μm.

FS CPI

MC CPI: D08-B; E31-P02D; E31-P03; E34-C02; E35-C; E35-K02; E35-U02

=> d 47-76 ibib abs ind

L134 ANSWER 47 OF 76 PASCAL COPYRIGHT 2008 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2002-0374722 PASCAL Full-text

TITLE (IN ENGLISH): Incorporation and optical behaviour of 4-dimethylaminazobenzene in sol-gel silica thin coatings
AUTHOR: VILLEGAS M. A.; GARCIA M. A.; PAJE S. E.; LLOPIS J.
CORPORATE SOURCE: CENIM, Consejo Superior de Investigaciones Cientificas, Avda, Gregorio del Amo, 8, 28040 Madrid, Spain; Dpto. de Fisica de Materiales, Faculty de Ciencias Fisicas, Universidad Complutense de Madrid, Ciudad Universitaria s/n, 28040 Madrid, Spain; E.T.S. Ingenieros de Caminos, Universidad de Castilla-La Mancha, Paseo Universidad, 4, 13071 Ciudad Real, Spain
SOURCE: Journal of the European Ceramic Society, (2002), 22(9-10), 1475-1482, 16 refs.
ISSN: 0955-2219
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United Kingdom
LANGUAGE: English
AVAILABILITY: INIST-21153, 354000101241060090

AN 2002-0374722 PASCAL Full-text

AB Various percentages of 4-dimethylaminazobenzene (dimethyl yellow, DY) have been incorporated into silica sol-gel coatings prepared from tetraethylorthosilicate and methyltriethoxysilane. The dye was entraped in the sol- gel layer maintaining its acid-basic properties. Sensitivity of coatings against pH in aqueous media was evaluated by absorption spectrophotometry for each type of samples, including one pre-treated at low temperature. The response time of coatings from acid pH to neutral conditions and vice versa allows to propose the use of this system as a pH optical sensor. On the other hand, several tests oriented to point out the behaviour of coatings during chemical attack were performed: firstly by dipping the samples in distilled water for different lengths of time and, secondly, submitting them to reiterated cycles at 60 C in a washing machine using conventional abrasive detergent. Results obtained in both cases indicated good resistance, especially for those hybrid films prepared from tetraethylorthosilicate and methyltriethoxysilane doped with 5 weight% DY.

CC 001B80A15L; Physics; Materials science; Crystal growth
001B60H55L; Physics; Condensed matter physics, Materials science; Surfaces, Interfaces, Films
001B70H66S; Physics; Condensed matter physics, Materials science; Optical properties
001C01J08; Chemistry; General chemistry, Physical chemistry; Colloidal state, Dispersed states

CCFR 001B80A15L; Physique; Science des materiaux; Croissance cristalline
001B60H55L; Physique; Physique de l'etat condense, Science des materiaux; Surfaces, Interfaces, Films
001B70H66S; Physique; Physique de l'etat condense, Science des materiaux; Proprietes optiques
001C01J08; Chimie; Chimie generale, Chimie physique; Etat colloidal, Etats disperses

CCES 001B80A15L; Fisica; Ciencia de los materiales; Crecimiento cristalino
001B60H55L; Fisica; Fisica del estado condensado, Ciencia de los materiales; Superficies, Interfases, Peliculas
001B70H66S; Fisica; Fisica del estado condensado, Ciencia de los materiales; Propiedades opticas
001C01J08; Quimica; Quimica general, Fisicoquimica; Estado coloidal, Estados dispersados

PAC 8115L; 6855L; 7866S
CT Experimental study; Growth from solution; Sol-gel process; Coatings; Thin films; Silicon oxides; Porous materials; Microporosity; Doping; Azo dyes; Optical sensors; Absorption spectroscopy; Precursor; Organic silicate; Organic siloxane; pH value
CTFR Etude experimentale; Methode en solution; Procede sol gel; Revetement; Couche mince; Silicium oxyde; Materiau poreux; Microporosite; Dopage; Colorant azoique; Capteur optique; Spectrometrie absorption; Precurseur; Silicate organique; Siloxane organique; pH; Silane(methyl triethoxy); 8115L; 6855L; 7866S; SiO2; O Si; Diazene(1-[4-dimethylaminophenyl]-2-phenyl); Silicate(tetraethyl)
CTES Metodo en solucion; Microporosidad; Doping; Silicato organico; Siloxano organico
BT Inorganic compounds; Oxides; Organic compounds
BTFR Compose mineral; Oxyde; Compose organique

L134 ANSWER 48 OF 76 PASCAL on STN

ACCESSION NUMBER: 2002-0515261 PASCAL Full-text
COPYRIGHT NOTICE:
TITLE (IN ENGLISH): Properties of copper-aluminum oxide films prepared by solution methods
Proceedings of the 2nd International Symposium on Transparent Oxide Thin Films for Electronics and Optics (TOEO-2), Tokyo, Japan, November 8-9, 2001
AUTHOR: TONOOKA Kazuhiko; SHIMOKAWA Katsuyoshi; NISHIMURA Okio
HOSONO Hideo (ed.); ICHINOSE Noboru (ed.); SHIGESATO Yuzo (ed.)
CORPORATE SOURCE: Nanoelectronics Research Institute, National Institute for Advanced Industrial Science and Technology, AIST Tsukuba Central 2, 1-1 Umezono, Tsukuba Ibaraki 305-8568, Japan; Research Institute of Biological Resources, National Institute for Advanced Industrial Science and Technology, Sapporo 062-8517, Japan
Materials and Structures Laboratory, Tokyo Institute of Technology 4259, Natatsuta, Midori, Yokohama 226-8503, Japan; School of Science and Engineering, Waseda University, Okubo 3-4-1, Shinjuku, Tokyo 169-8555, Japan; Department of Chemistry, College of Science and Engineering, Aoyama Gakuin University, 6-16-1 Chitosedai, Setagaya-ku, Tokyo 157-8572, Japan
Japan Society of Promotion of Science. 166th Committee, Japan (patr.)
SOURCE: Thin solid films, (2002), 411(1), 129-133, 11 refs.
Conference: 2 TOEO International Symposium on Transparent Oxide Thin Films for Electronics and Optics, Tokyo (Japan), 8 Nov 2001
ISSN: 0040-6090 CODEN: THSFAP
DOCUMENT TYPE: Journal; Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Switzerland
LANGUAGE: English
AVAILABILITY: INIST-13597, 354000109030040260

AN 2002-0515261 PASCAL Full-text

AB Conducting copper-aluminum oxide films have been prepared by employing the dip-coating method. Metal alkoxides and nitrates were examined as metal sources in the precursor solutions for the preparation of CuAlO.sub.2 samples based on the procedures of sol- gel and nitrate processes, respectively. Fired samples were investigated by X-ray diffraction (XRD), thermogravimetric analysis and electrical measurements. Properties of the samples depended on the calcination temperature and the composition of the precursor solution. Electrical conductance of the samples corresponds well with the delafossite CuAlO.sub.2 content, which was determined by the intensity of corresponding lines in the XRD patterns. The lowest sheet resistance (45 Ω/. box.) was obtained for a film sample prepared by the nitrate process followed by a calcination at 1100°C for 4 h in air.

CC 001B80A15L; Physics; Materials science; Crystal growth
001B70C50D; Physics; Condensed matter physics, Materials science; Electronic properties
CCFR 001B80A15L; Physique; Science des materiaux; Croissance cristalline
001B70C50D; Physique; Physique de l'etat condense, Science des materiaux; Proprietes electroniques
CCES 001B80A15L; Fisica; Ciencia de los materiales; Crecimiento cristalino
001B70C50D; Fisica; Fisica del estado condensado, Ciencia de los materiales; Propiedades electronicas
PAC 8115L; 7350D
CT Experimental study; Crystal growth from solutions; Dip coating; Thin films; Copper oxides; Aluminium oxides; Electrical conductivity; Film resistor; CV characteristic; Transparent material; Heat treatments; Thermal stability; Calcination; Conducting materials
CTFR Etude experimentale; Croissance cristalline en solution; Depot immersion; Couche mince; Cuivre oxyde; Aluminium oxyde; Conductivite electrique; Resistance couche; Caracteristique capacite tension; Materiau transparent; Traitement thermique; Stabilite thermique; Calcination; 8115L; 7350D; Materiau conducteur; CuAlO2; Al Cu O
CTES Resistor pelicular; Material transparente
BT Thermal properties; Electrical properties; Inorganic compounds; Transition element compounds
BTFR Propriete thermique; Propriete electrique; Compose mineral; Metal transition compose

L134 ANSWER 49 OF 76 PASCAL COPYRIGHT 2008 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2001-0258870 PASCAL Full-text

TITLE (IN ENGLISH): Characterization of pitting corrosion in bare and sol-gel coated aluminum 2024-T3 alloy
Papers Presented at the Workshop on Advanced Metal Finishing Techniques for Aerospace Applications, August 23-28, 1999, Keystone, Colorado, USA
AUTHOR: VOEVODIN N.; JEFFCOATE C.; SIMON L.; KHOBAIB M.; DONLEY M.
CORPORATE SOURCE: University of Dayton Research Institute, 300 College Park, Dayton, OH 45469-0168, United States; Systran Federal Systems, Linden Avenue, Dayton, OH, United States; Air Force Research Laboratories, Materials and Manufacturing

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                         Directorate, AFRL/MLBT, Wright-Patterson Air Force
                         Base, Dayton, OH 45433-7750, United States
                         Air Force Research Laboratory, Dayton, Ohio,
                         United States (patr.)
SOURCE:                  Surface & coatings technology, (2001),
                         140(1), 29-34, 11 refs.
                         Conference: Workshop on Advanced Metal Finishing
                         Techniques for Aerospace Applications, Keystone,
                         Colorado (United States), 23 Aug 1999
                         ISSN: 0257-8972  CODEN: SCTEEJ
DOCUMENT TYPE:           Journal; Conference
BIBLIOGRAPHIC LEVEL:     Analytic
COUNTRY:                 Switzerland
LANGUAGE:                English
AVAILABILITY:            INIST-15987, 354000098186760050
AN     2001-0258870   PASCAL   Full-text
CP     Copyright .COPYRGT. 2001 INIST-CNRS. All rights reserved.
AB      The prevention of pitting corrosion in aerospace aluminum alloys by the
        application of protective sol-gel coatings requires a thorough understanding
        of pit formation kinetics and morphology developments in such surface coating
        systems. This study reports results of chemical and electrochemical methods
        of pitting corrosion tests for bare and sol- gel coated Al 2024-T3 alloy.
        Specific attention is focused on the characterization of pitting in samples
        coated with vinyl-silicate and epoxy-silicate sol- gel coatings. Specimens
        were exposed to a variety of chemically aggressive environments, based on 3-
        5% NaCI solutions with addition of HCI and H.sub.2SO.sub.4, including a
        standard CASS solution. The exposure of bare samples to these environments
        produced extensive surface corrosion, but pits were not observed for sol-gel
        coated
        samples. Anodic polarization tests with potentials above that required for
        pitting in bare samples were used to initiate pitting corrosion in sol-gel
        coated samples. A corrosion current monitoring test provided a method of
        controlling the pit formation process, which provides well-defined pits in
        terms of spatial density and geometry. A two-stage kinetic phase in pit
        development was observed and correlated with pit morphological developments
        in sol-gel coatings. An initial low current stage was associated with pit
        penetration through the coating to the surface and the secondary high current
        stage was associated with an active growth stage which grew in sub-coating
        surface interface regions. Results of this research provide a basis for
        designing and improving corrosion protection systems based on the application
        of sol-gel coatings.
CP     Copyright .COPYRGT. 2001 INIST-CNRS. All rights reserved.
CC     001D11E04; Applied sciences; Metals, Metallurgy, Materials science;
       Corrosion
       240; Metals, Metallurgy, Materials science
CCFR   001D11E04; Sciences appliquees; Metaux, Metallurgie, Science des
       materiaux; Corrosion
       240; Metaux, Metallurgie, Science des materiaux
CCES   001D11E04; Ciencias aplicadas; Metales, Metalurgia, Ciencia de los
       materiales; Corrosion
       240; Metales, Metalurgia, Ciencia de los materiales
CT     Corrosion; Pitting corrosion; Coatings; Sol gel
       process; Corrosion protection; Aluminium base alloys;
       Polarization spectrometry; Corrosion test; Salt corrosion; Sodium
       chloride; Experimental study
CTFR   Corrosion; Corrosion piqure; Revetement; Procede sol
       gel; Protection corrosion; Alliage base aluminium;
       Spectrometrie polarisation; Essai corrosion; Corrosion sel; Sodium
       chlorure; Etude experimentale
CTDE   Korrosion; Lochkorrosion; Ueberzug; Korrosionsschutz;
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Korrosionsversuch; Salzkorrosion; Natriumchlorid; Experimentelle Untersuchung
CTES Corrosion; Corrosion superficial; Revestimiento; Procedimiento sol gel; Proteccion corrosion; Espectrometria polarizacion; Ensayo corrosion; Corrosion sal; Sodio cloruro; Estudio experimental

L134 ANSWER 50 OF 76 PASCAL

ACCESSION NUMBER: 2001-0259437 PASCAL Full-text

TITLE (IN ENGLISH): A comparative evaluation of corrosion protection of sol-gel based coatings systems
Papers Presented at the Workshop on Advanced Metal Finishing Techniques for Aerospace Applications, August 23-28, 1999, Keystone, Colorado, USA
AUTHOR: KHOBAIB M.; REYNOLDS L. B.; DONLEY M. S.
CORPORATE SOURCE: University of Dayton Research Institute, 300 College Park, Dayton, OH 45469-0168, United States; Air Force Research Laboratories, Materials and Manufacturing Directorate, Nonmetallic Materials Division, Coatings Research Group, Wright-Patterson AFB, OH 45433-7750, United States
Air Force Research Laboratory, Dayton, Ohio, United States (patr.)
SOURCE: Surface & coatings technology, (2001), 140(1), 16-23, 23 refs.
Conference: Workshop on Advanced Metal Finishing Techniques for Aerospace Applications, Keystone, Colorado (United States), 23 Aug 1999
ISSN: 0257-8972 CODEN: SCTEEJ
DOCUMENT TYPE: Journal; Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Switzerland
LANGUAGE: English
AVAILABILITY: INIST-15987, 354000098186760030
AN 2001-0259437 PASCAL Full-text

AB Sol-gel technology offers a wide choice of chemistries and is currently perceived as a potential replacement for current chromate treatments. The corrosion prevention behavior of a commercially available sol-gel surface pretreatment with six different primers was evaluated using electrochemical impedance spectroscopy. Eighteen different coatings systems were selected for evaluation. The test panels were prepared in three separate treatment groups of deoxidization only, Alodine 1200 chromate conversion treatment, and Lord Aeroglaze sol-gel 110 non-chromate surface treatment, followed by six different primer coatings , and a polyurethane top coat. A variety of environmental conditions were generated based on Harrison's solution, salt fog and UV light exposure. Electrochemical impedance measurements were obtained from panels exposed to continuous immersion, alternate immersion in Harrison's solution and an alternate cycle of salt fog and UV chamber. The corrosion behavior of sol-gel based coatings was compared to that of chromate conversion coatings and de-oxidized samples. Scribed panels were also tested to evaluate the corrosion resistance behavior of scratched or cracked coatings. Of all the 18 coatings systems investigated, the E-coat based system showed the best corrosion resistance performance. The sol-gel treated E-coat provided an acceptable corrosion protection level, a barrier

resistance of over 10.sup.8 Ω and performed similar to the conventional chromate system, as seen from the results of unscribed panels. However, the scribed panel data clearly demonstrates the superior performance of the Alodine 1200 treated systems over the sol-gel based coating systems. Cyclic salt fog/UV exposure did not provide clear discrimination over the alternate immersion test. The scribed panel, on the other hand, did provide a higher degree of discrimination in a short time.

CC 001D11E03; Applied sciences; Metals, Metallurgy, Materials science; Corrosion
240; Metals, Metallurgy, Materials science

CCFR 001D11E03; Sciences appliquees; Metaux, Metallurgie, Science des materiaux; Corrosion
240; Metaux, Metallurgie, Science des materiaux

CCES 001D11E03; Ciencias aplicadas; Metales, Metalurgia, Ciencia de los materiales; Corrosion
240; Metales, Metalurgia, Ciencia de los materiales

CT Corrosion protection; Protective coatings; Sol gel process; Electrochemical method; Conversion coating; Urethane copolymer; Nyquist diagram; Corrosion test; Experimental study

CTFR Protection corrosion; Revetement protecteur; Procede sol gel; Methode electrochimique; Depot conversion; Urethanne copolymere; Diagramme Nyquist; Essai corrosion; Etude experimentale

CTDE Korrosionsschutz; Schutzueberzug; Konversionsbeschichten; Korrosionsversuch; Experimentelle Untersuchung

CTES Proteccion corrosion; Revestimiento protector; Procedimiento sol gel; Metodo electroquimico; Deposito conversion; Uretano copolimero; Diagrama Nyquist; Ensayo corrosion; Estudio experimental

L134 ANSWER 51 OF 76 PASCAL COPYRIGHT 2008 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 1998-0331671 PASCAL Full-text

TITLE (IN ENGLISH): Fluorescent porous sol-gel coatings for near-IR single mode fiber chemical sensors
Micro- and nanofabricated structures and devices for biomedical environmental applications : San Jose CA, 26-27 January 1998

AUTHOR: FIELDING A. J.; DAVIS C. C.
GOURLEY Paul L. (ed.)

CORPORATE SOURCE: Department of Electrical Engineering, University of Maryland at College Park, A.V. Williams Building, College Park, MD 20742, United States
International Society for Optical Engineering, Bellingham WA, United States (patr.)

SOURCE: SPIE proceedings series, (1998), 3258, 91-97, 14 refs.
Conference: Micro- and nanofabricated structures and devices for biomedical environmental applications. Conference, San Jose CA (United States), 26 Jan 1998
ISSN: 1017-2653
ISBN: 0-8194-2697-0

DOCUMENT TYPE: Journal; Conference

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-21760, 354000076397360120
AN 1998-0331671 PASCAL Full-text

AB Reports of enhanced photostability of organic fluorescent dyes when entrapped in a sol-gel matrix have led us to examine the behavior of the near-infrared dye IR-125 coated onto the end of single mode optical fibers. Various fiber tip geometries were fabricated and a specially prepared rounded tip was found to be optimal for long-term adhesion of thick sol- gel coatings to the fiber. Fluorescence captured back into the fibers was measured over one month and different initial concentrations of dye were also examined. The porosity of sol-gel thin films has been exploited in the past to fabricate pH, oxygen, and other enzyme-based sensors. We have tested the porosity of our coatings by showing a non-reversible pH sensitivity, however current data is insufficient to rule out the possibility of a structural change in the coating also effecting these results. Using the rounded tip geometry, eighty percent of our samples lasted over two months without cracking while still maintaining fluorescence activity. Exposed to air, the coated fibers were each able to be examined an average of 200 times with 20 μsec interrogation pulses of 1.5 mW from a 785 nm semiconductor laser diode before photobleaching reduced the resulting signal to background.

CC 001B00G60V; Physics; Metrology
CCFR 001B00G60V; Physique; Metrologie
CCES 001B00G60V; Fisica; Metrologia
CT Optical fibers; Measurement sensor; Sol-gel process; Chemical sensors; Probes; Photobleaching; Cyanine dyes; pH value
CTFR Fibre optique; Capteur mesure; Procede sol gel; Capteur chimique; Sonde; Photoblanchiment; Colorant cyaninique; pH
CTES Captador medida; Fotoblanqueo

L134 ANSWER 52 OF 76 PASCAL COPYRIGHT 2008 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1998-0010571 PASCAL Full-text

TITLE (IN ENGLISH): Laser firing of transparent conducting SnO.sub.2 sol-gel coatings
AUTHOR: GANZ D.; REICH A.; AEGERTER M. A.
CORPORATE SOURCE: Institut fuer Neue Materialien (INM), Im Stadtwald, Gebaeude 43, D-66123 Saarbruecken, Germany, Federal Republic of
SOURCE: Journal of non-crystalline solids, (1997), 218, 242-246
Conference: Coatings on Glass
ISSN: 0022-3093 CODEN: JNCSBJ
DOCUMENT TYPE: Journal; Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English
AVAILABILITY: INIST-14572, 354000068618690082
AN 1998-0010571 PASCAL Full-text

AB Copyright (c) 1997 Elsevier Science B.V. All rights reserved. Sb doped sol-gel SnO.sub.2 films were prepared from 0.5 M alcoholic solution of SnCl.sub.2(OAc).sub.2 doped with 5 mol% SbCl.sub.3 and deposited via a dip

coating process on fused silica substrates. The coatings have been fired by CO.sub.2 laser irradiation by means of a 700 W cw CO.sub.2 laser using a fast scan mode in which the laser beam is scanned by a high speed rotating polygon scanner (ω.sub.m.sub.a.sub.x=8800 rpm) in one direction and the sample is moved perpendicularly at a speed up to 250 mm/s. Areas can be densified at a typical rate of 12 cm.sup.2/s. The properties of the coatings have been measured by several methods: their sheet resistance, R.sub.. box., has been measured using a four-probe technique, the structure of the coatings has been determined by X-ray diffraction at grazing incidence, their thickness by a surface profiler and their morphology by transmission electron microscopy. The thickness of the coatings, the crystallite size and the sheet resistance are determined by thermal driven processes. The coatings are made of dense aggregates of spherical shaped crystallites. The smallest resistivity obtained for a 100 nm thick coating is ρ=6 x 10.sup.-.sup.3 Ω cm a value that is three times lower than that obtained with conventionally heat treated samples. .COPYRGT. 1997 Elsevier Science B.V.

CC 001B70C61L; Physics; Condensed matter physics, Materials science; Electronic properties
001B80A40W; Physics; Materials science

CCFR 001B70C61L; Physique; Physique de l'etat condense, Science des materiaux; Proprietes electroniques
001B80A40W; Physique; Science des materiaux

CCES 001B70C61L; Fisica; Fisica del estado condensado, Ciencia de los materiales; Propiedades electronicas
001B80A40W; Fisica; Ciencia de los materiales

PAC 7361L; 8140W

CT Experimental study; Thin films; Sol-gel process; Laser beam annealing; Sheet resistivity; Crystal structure; Sintering; Tin oxides

CTFR Etude experimentale; Couche mince; Procede sol gel
; Recuit faisceau laser; Resistivite couche; Structure cristalline; Frittage; Etain oxyde; 7361L; 8140W; SnO2; O Sn

BT Inorganic compounds

BTFR Compose mineral

L134 ANSWER 53 OF 76 PASCAL COPYRIGHT 2008 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 1998-0015865 PASCAL Full-text

COPYRIGHT NOTICE: Copyright .COPYRGT. 1997 Elsevier Science B.V. All rights reserved.

TITLE (IN ENGLISH): Thick sol-gel coatings based on the B.sub.2O.sub.3-SiO.sub.2 system

AUTHOR: VILLEGAS M. A.; APARICIO M.; DURAN A.

CORPORATE SOURCE: Instituto de Ceramica y Vidrio, CSIC, Antigua Ctra. Valencia Km. 24,300, 28500 Arganda del Rey, Madrid, Spain

SOURCE: Journal of non-crystalline solids, (1997), 218, 146-150
Conference: Coatings on Glass
ISSN: 0022-3093 CODEN: JNCSBJ

DOCUMENT TYPE: Journal; Conference

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

SUMMARY LANGUAGE: English

AVAILABILITY: INIST-14572, 354000068618690050

AN 1998-0015865 PASCAL Full-text

AB Copyright (c) 1997 Elsevier Science B.V. All rights reserved. Sol-gel coatings composed of B.sub.2O.sub.3-SiO.sub.2 (10, 20 and 30 mol% B.sub.2O.sub.3) were prepared using boron trimethoxide (B[OCH.sub.3].sub.3), silicon tetraethoxide (TEOS) and methyltriethoxysilane (SiCH.sub.3[OCH.sub.2CH.sub.3].sub.3) as precursors. Soda-lime glass slides were used as substrates. Coatings were obtained at room temperature and atmospheric pressure by dip- coating into an automatically controlled glove box with withdrawal rates ranging from 8 to 33 cm min.sup.-.sup.1. Densification was carried out at 500°C during 1 h in air. The thickness of the obtained coatings as a function of withdrawal rate was measured with a profilometer and the presence of cracks was monitored by optical microscopy. The effect of relative humidity on the thickness and transparency of the coatings was measured. Critical thickness varied from 1 μm to 0.6 μm depending on the B.sub.2O.sub.3 content. On the other hand, multilayer coatings were prepared to obtain crack-free and transparent samples with thickness greater than 1 μm. As an interesting application, oxidation resistance of borosilicate coatings on SiC/C composite substrates was measured by a stepwise test between 400 and 1500°C. .COPYRGT. 1997 Elsevier Science B.V.

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CC 001B80A15L; Physics; Materials science; Crystal growth

CCFR 001B80A15L; Physique; Science des materiaux; Croissance cristalline

CCES 001B80A15L; Fisica; Ciencia de los materiales; Crecimiento cristalino

PAC 8115L

CT Experimental study; Crystal growth from solutions; Sol-gel process; Dip coating; Coatings; Ternary compounds; Boron oxides; Silicon oxides; Thin films; Solid solutions; Chemical composition; Relative humidity; Multilayers; Heat treatments; Densification

CTFR Etude experimentale; Croissance cristalline en solution; Procede sol gel; Depot immersion; Revetement; Compose ternaire; Bore oxyde; Silicium oxyde; Couche mince; Solution solide; Composition chimique; Humidite relative; Multicouche; Traitement thermique; Densification; 8115L; B O Si

CTES Humedad relativa

BT Inorganic compounds

BTFR Compose mineral

L134 ANSWER 54 OF 76 COMPENDEX COPYRIGHT 2008 EEI on STN

ACCESSION NUMBER: 2004(41):4096 COMPENDEX Full-text

TITLE: Vibrational spectroscopic studies of vinyltriethoxysilane sol-gel and its coating.

AUTHOR: Li, Ying-Sing (Department of Chemistry University of Memphis, Memphis, TN 38152-6060, United States); Wright, Paul B.; Puritt, Rosalyn; Tran, Tuan

SOURCE: Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy v 60 n 12 October 2004 2004.p 2759-2766

SOURCE: Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy v 60 n 12 October 2004 2004.p 2759-2766
CODEN: SAMCAS ISSN: 1386-1425

PUBLICATION YEAR: 2004

DOCUMENT TYPE: Journal

TREATMENT CODE: Theoretical; Experimental

LANGUAGE: English

AN 2004(41):4096 COMPENDEX Full-text

AB Infrared and Raman spectra of vinyltriethoxysilane (VTES), the VTES sol-gel, and the sol-gel
coated aluminum have been collected. The assignments of the vibrational modes for the silane, the sol-gel, and the sol-gel films have been made based on the group frequencies and the spectral variation collected at different physical and chemical states of the sol-gel samples. Applying the sol-gels onto the metal grids allowed the drying and the high temperature treatment of the samples for the collection of infrared transmission spectra. From the variation of the sol-gel and the sol-gel coated aluminum IR spectra with temperature, it was noticed that the samples partially decomposed when the temperature was higher than 100deg C. Electrochemical experiments have demonstrated that the anticorrosion property of the coated aluminum has significantly increased. The water and the hexadecane contact angle measurements showed that the surface modified metal had a much higher hydrophobic property than the untreated metal. $CPY 2004 Elsevier B.V. All rights reserved. 17 Refs.

AN 2004(41):4096 COMPENDEX Full-text

CC 804.2 Inorganic Components; 801.4.1 Electrochemistry; 541.1 Aluminum; 539.1 Metals Corrosion; 812.3 Glass; 539.2 Corrosion Protection

CT *Silanes; Raman scattering; Ellipsometry; Glass fibers; Corrosion prevention; Spectroscopic analysis; Infrared spectroscopy; Sol -gels; Electrochemistry; Aluminum; Corrosion resistance

ST Vinyltriethoxysilanes; Silane coupling agent; Reflector absorption IR (RAIR)

L134 ANSWER 55 OF 76 COMPENDEX COPYRIGHT 2008 EEI on STN

ACCESSION NUMBER:	2005(10):3993 COMPENDEX Full-text
TITLE:	Tribology and adhesion of zirconia nano-coatings on surface treated titanium.
AUTHOR:	Roest, R. (Department of Chemistry University of Technology, Sydney, Broadway, NSW 2007, Australia); Eberhardt, A.W.; Latella, B.; Wuhrer, R.; Ben-Nissan, B.
MEETING TITLE:	Transactions - 7th World Biomaterials Congress.
MEETING LOCATION:	Sydney, Australia
MEETING DATE:	17 May 2004-21 May 2004
SOURCE:	Transactions - 7th World Biomaterials Congress 2004.p 1783
SOURCE:	Transactions - 7th World Biomaterials Congress 2004.p 1783 ISBN: 1877040193
PUBLICATION YEAR:	2004
MEETING NUMBER:	64310
DOCUMENT TYPE:	Conference Article
TREATMENT CODE:	Numerical Data; Experimental
LANGUAGE:	English

AN 2005(10):3993 COMPENDEX Full-text

AB The effects of tribology and tensile adhesion of zirconia nano- coatings on surface treated titanium metal surfaces, were analyzed. The modification of titanium metal surfaces was performed by anodizing and phosphatase treatment with specific phosphate adsorption and photocatalysis treatments to improve the wettability. The titanium samples were anodized in sulfuric and phosphoric acid at varying concentrations and at different currents ranging from 10mins to 30mins. The tribological properties were investigated using an AMTI Orthopod machine, with UHMWPE pins articulating in bovine serum. The results show that adhesion tests for 50V anodizing, photo catalysis reaction and phosphate treatment, exhibited higher interfacial fracture energy.(Edited abstract) 3 Refs.

AN 2005(10):3993 COMPENDEX Full-text

CC 801.4 Physical Chemistry; 813.2 Coating Materials; 804.2 Inorganic

Components; 931 Applied Physics Generally; 931.2 Physical Properties of Gases, Liquids and Solids; 802 Chemical Apparatus and Plants. Unit Operations, Unit Processes
CT *Surface chemistry; Biomedical engineering; Anodic oxidation; Surgery; Biocompatibility; Sol-gels; Phosphates; Coatings; Zirconia; Tribology; Adhesion; Surface treatment; Titanium
ST Surface coatings; Anatase structure; Bovine serum; Rutile structure
ET V; 50V; is; V is

L134 ANSWER 56 OF 76 COMPENDEX COPYRIGHT 2008 EEI on STN
ACCESSION NUMBER: 2004(49):1879 COMPENDEX Full-text
TITLE: Corrosion protection of steel by hybrid sol-gel coating.
AUTHOR: Avci, G.G. (TUBITAK Marmara Research Center, Gebze, Kocaeli, Turkey); Abanoz, D.
MEETING TITLE: Proceedings of the 8th Conference and Exhibition of the European Ceramic Society.
MEETING ORGANIZER: Turkish Ceramic Society; European Ceramic Society
MEETING LOCATION: Istanbul, Turkey
MEETING DATE: 29 Jun 2003-03 Jul 2003
SOURCE: Key Engineering Materials v 264-268 n I 2004.p 387-390
SOURCE: Key Engineering Materials v 264-268 n I 2004.p 387-390
CODEN: KEMAEY ISSN: 1013-9826
PUBLICATION YEAR: 2004
MEETING NUMBER: 63890
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Experimental
LANGUAGE: English
AN 2004(49):1879 COMPENDEX Full-text
AB Sol-gel films prepared by the modification of silanes with various amounts of organics were studied for their corrosion protection properties on steel. Spray coated films were dried between 110- 150 deg C for 1 hour. Transparent and various colored sols were prepared by this method. SEM techniques were used to determine the microcharacteristics of the films. Salt spray and humidity tests on the coated and uncoated steel samples, adhesion, flexibility and alkali test in 1% NaOH were carried according to ASTM standards. Coating the steel substrates by organically modified sols showed good protection properties avoiding any chemical pretreatement. 4 Refs.
AN 2004(49):1879 COMPENDEX Full-text
CC 804 Chemical Products Generally; 545.3 Steel; 539.2 Corrosion Protection; 714.2 Semiconductor Devices and Integrated Circuits; 539.1 Metals Corrosion; 801 Chemistry
CT *Sol-gels; Heat treating furnaces; Antireflection coatings; Defects; Atmospheric humidity; Polyurethanes; Steel; Corrosion protection; Thin films; Corrosion; Adhesion; Organic coatings; Epoxy resins
ST Sol-gel coatings; Antireflective surfaces; Sol-gel solutions
ET H*Na*O; NaOH; Na cp; cp; O cp; H cp

L134 ANSWER 57 OF 76 COMPENDEX COPYRIGHT 2008 EEI on STN
ACCESSION NUMBER: 2004(8):5860 COMPENDEX Full-text
TITLE: Colorimetric bismuth determination in pharmaceuticals using a xylenol orange sol-gel sensor coupled to a multicommutated flow system.

AUTHOR: Jeronimo, Paula C.A. (REQUIMTE Depto. de Quim.-Fisica Universidade do Porto, Porto 4050-047, Portugal); Araujo, Alberto N.; Montenegro, M. Conceicao B.S.M.; Satinsky, Dalibor; Solich, Petr
SOURCE: Analytica Chimica Acta v 504 n 2 Feb 23 2004 2004.p 235-241
SOURCE: Analytica Chimica Acta v 504 n 2 Feb 23 2004 2004.p 235-241
CODEN: ACACAM ISSN: 0003-2670
PUBLICATION YEAR: 2004
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
LANGUAGE: English
AN 2004(8):5860 COMPENDEX Full-text
AB A new sol-gel Bi(III) sensor was developed by incorporating xylenol orange (XO) into sol-gel thin films (<1mum thick) coated on glass slides. Several sols were produced in order to evaluate the effect of different processing parameters on the final characteristics of the sensor. Sensor films based on tetramethoxysilane (TMOS) as precursor, nitric acid catalysis, water:alkoxide ratio of 2 and XO concentration of 1.5gl-1 were found to be the most suitable to be used as Bi(III) sensors. They presented good sensitivity, reversibility and stability, low leaching and fast response time in the proposed working conditions. These sensors were coupled to a multicommutated flow system for the determination of Bi(III) in pharmaceutical products. The absorbance of the Bi(III)-immobilized XO complex formed was monitored at 515nm. The regeneration of the sensor was accomplished by flowing a Cl- ion solution through the flow cell containing the sensor membranes. The procedure enables a relative standard deviation of results better than 0.8%, an analytical concentration range between 125.0 and 875.0 mugl-1, a detection limit of 7.0mugl-1 and a sampling frequency of 45 samples per hour. The results obtained on real samples analysis were compared with those obtained by EDTA titrimetric method (British Pharmacopoeia), with relative deviation errors inferior to 5%. $CPY 2003 Elsevier B.V. All rights reserved. 37 Refs.
AN 2004(8):5860 COMPENDEX Full-text
CC 461.6 Medicine; 804.1 Organic Components; 549.3 Others (including Bismuth, Boron, Cadmium, Cobalt, Mercury, Niobium, Selenium, Silicon, Tellurium and Zirconium); 801 Chemistry; 714.2 Semiconductor Devices and Integrated Circuits; 812.3 Glass
CT *Drug products; Chemical sensors; Thin films; Alcohols; Glass; Colorimetry; Sol-gels; Bismuth
ST Multicommutated flow systems
ET Bi; Cl

L134 ANSWER 58 OF 76 COMPENDEX COPYRIGHT 2008 EEI on STN
ACCESSION NUMBER: 1999(12):1780 COMPENDEX Full-text
TITLE: Synthesis, characterization and electrochromic properties of NiOxHy thin film prepared by a sol-gel method.
AUTHOR: Sharma, Pramod K. (Inst de Fisica, Sao Paulo, Braz); Fantini, M.C.A.; Gorenstein, A.
MEETING TITLE: Proceedings of the 1997 11th International Conference on Solid State Ionics, SSI.
MEETING LOCATION: Hawaii, HI, USA
MEETING DATE: 16 Nov 1997-21 Nov 1997
SOURCE: Solid State Ionics v 113-115 Dec 1998.p 457-463
SOURCE: Solid State Ionics v 113-115 Dec 1998.p 457-463
CODEN: SSIOD3 ISSN: 0167-2738
PUBLICATION YEAR: 1998
MEETING NUMBER: 49586

DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
LANGUAGE: English
AN 1999(12):1780 COMPENDEX Full-text
AB In this work, sol-gel and dip-coating methods were used to produce nickel oxide/hydroxide films.Strips of glass previously coated with transparent/conducting films of SnO2 were utilized as substrates.The nickel oxide films were obtained by wetting the substrates in a solution of NiCl2 center dot 6H2O in butanol and ethylene glycol.The dried gel films were found to be transparent and moisture sensitive.X-ray diffraction analysis (XRD) was performed to identify the produced compounds of heat-treated samples.A significant effect of temperature and time on the film's thickness was observed.Simultaneously, chemical analysis, e.g.carbonaceous matter and water, were examined by DSC and FTIR spectroscopy.Transmittance measurements were performed in the range of 350 nm to 850 nm in the films at different optical states.The coloration/bleaching process was found to be reversible.The cyclic voltammetry shows broad peaks related to Ni(II)/Ni(III) and Ni(III)/Ni(IV) oxidation/reduction processes. The measurements are discussed in detail in terms of the temperature effect.(Author abstract) 26 Refs.
AN 1999(12):1780 COMPENDEX Full-text
CC 708.2 Conducting Materials; 804.2 Inorganic Components; 802.2 Chemical Reactions; 701.1 Electricity: Basic Concepts and Phenomena; 741.1 Light. Optics; 804 Chemical Products Generally
CT *Conductive films; Oxidation; Electrochromism; Sol-gels; X ray diffraction analysis; Thermal effects; Bleaching; Cyclic voltammetry; Nickel compounds; Synthesis (chemical)
ST Nickel hydroxide; Dip coating
ET O*Sn; SnO2; Sn cp; cp; O cp; Cl*Ni; NiCl2; Ni cp; Cl cp; H*O; H2O; 6H2O; is; H is; 6H; H cp; Ni; H*Ni*O; NiOxHy

L134 ANSWER 59 OF 76 COMPENDEX COPYRIGHT 2008 EEI on STN
ACCESSION NUMBER: 1998(14):5518 COMPENDEX Full-text
TITLE: Analysis of binary electrochromic tungsten oxides with effective medium theory.
AUTHOR: von Rottkay, K. (Univ of California, Berkeley, CA, USA); Ozer, N.; Rubin, M.; Richardson, T.
MEETING TITLE: Proceedings of the 1997 24th International Conference on Metallurgical Coatings and Thin Films.
MEETING LOCATION: San Diego, CA, USA
MEETING DATE: 21 Apr 1997-25 Apr 1997
SOURCE: Thin Solid Films v 308-309 Oct 31 1997.p 50-55
SOURCE: Thin Solid Films v 308-309 Oct 31 1997.p 50-55
CODEN: THSFAP ISSN: 0040-6090
PUBLICATION YEAR: 1997
MEETING NUMBER: 47640
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical; Experimental
LANGUAGE: English
AN 1998(14):5518 COMPENDEX Full-text
AB Multicomponent oxides are of increasing interest for electrochromic electrodes.To reduce the large number of permutations in composition it would be useful to be able to predict the properties of the mixtures from the pure oxide components.WO3 mixed with V2O5 has been produced by a sol-gel technique in order to increase durability and color neutrality of conventional WO3 electrochromic coatings.Chemical composition was confirmed by Rutherford backscattering spectrometry (RBS).Surface morphology was analyzed by atomic force microscopy (AFM).Electrochromic performance of the films was tested by cyclic voltammetry with in-situ transmission control.Optical constants of vanadium tungsten oxides were determined over the whole solar spectrum.The

measurements included variable angle spectroscopic ellipsometry and spectral transmittance and reflectance.An attempt is made to treat doped tungsten oxide as an effective medium consisting of a mixture of WO3 with V2O5.In the clear state, comparison of optical constants and thickness directly determined on the samples yields qualitative agreement with results from effective-medium analysis. The resulting component fraction also agrees as long as the film density does not deviate too much from the linearly interpolated value between the pure components.For the colored state, preferential trapping of electrons at one atom species hinders the application of effective medium theory.(Author abstract) 17 Refs.

AN 1998(14):5518 COMPENDEX Full-text

CC 741.3 Optical Devices and Systems; 804 Chemical Products Generally; 741.1 Light. Optics; 813.2 Coating Materials; 931.2 Physical Properties of Gases, Liquids and Solids; 804.2 Inorganic Components

CT *Optical films; Reflectometers; Surface roughness; Morphology; Tungsten compounds; Rutherford backscattering spectroscopy; Atomic force microscopy; Cyclic voltammetry; Binary mixtures; Optical coatings

ST Binary electrochromic tungsten oxides; Effective medium approximation

ET O*V; V2O5; V cp; cp; O cp; O*W; WO3; W cp

L134 ANSWER 60 OF 76 COMPENDEX COPYRIGHT 2008 EEI on STN

ACCESSION NUMBER: 1996(35):624 COMPENDEX Full-text

TITLE: SnO2:Sb dip coated films on anodized aluminum selective absorber plates.

AUTHOR: Varol, H.S. (TUBITAK Marmara Research Cent, Kocaeli, Turk); Hinsch, A.

SOURCE: Solar Energy Materials and Solar Cells v 40 n 3 Jul 1996.p 273-283

SOURCE: Solar Energy Materials and Solar Cells v 40 n 3 Jul 1996.p 273-283

CODEN: SEMCEQ ISSN: 0927-0248

PUBLICATION YEAR: 1996

DOCUMENT TYPE: Journal

TREATMENT CODE: Application; Experimental

LANGUAGE: English

AN 1996(35):624 COMPENDEX Full-text

AB In this paper solar selective coatings have been prepared on aluminum substrates using a two phase eloxal technique. Porous anodic films were formed by dc anodization in phosphoric acid and followed by black coloration via ac electrolysis in nickel sulfate electrolyte.To increase the thermal, chemical and mechanical stability, and also to provide low emissivity, a protective layer of tin oxide was coated on the surface by the sol-gel process. Conditions required to produce good quality coatings having the best spectral selectivity and thermal stability were determined from spectral reflectance measurements and temperature tests. Microstructure and chemical composition of the best samples were investigated using SEM, EDX, AAS. The resulting technology has been formed into a process which suits the facilities and skills of Turkish industry.(Author abstract) 9 Refs.

AN 1996(35):624 COMPENDEX Full-text

CC 657.1 Solar Energy and Phenomena; 813.2 Coating Materials; 541.1 Aluminum; 539.2.1 Protection Methods; 804.2 Inorganic Components; 801.4.1 Electrochemistry

CT *Solar absorbers; Thermodynamic stability; Aluminum; Anodic oxidation; Phosphoric acid; Electrolysis; Electrolytes; Sol-gels; Coatings; Solar control films

ST Solar selective coatings; Selective absorber plates; Two phase eloxal method; Porous anodic films; Direct current anodization; Spectral reflectance measurements; Black coloration; AC electrolysis; Nickel sulfate electrolytes;

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     Sol-gel process
ET   O*Sb*Sn; O sy 3; sy 3; Sb sy 3; Sn sy 3; SnO2:Sb; Sb doping; doped
     materials; Sn cp; cp; O cp

L134 ANSWER 61 OF 76  JAPIO  (C) 2008 JPO  on STN
ACCESSION NUMBER:         1999-243992    JAPIO  Full-text
TITLE:                    SOL-GEL AND ITS USE IN TEST ON
                          WATER QUALITY
INVENTOR:                 FITZGERALD STEPHEN PETER; LAMONT JOHN VICTOR;
                          MCCONNELL ROBERT IVAN
PATENT ASSIGNEE(S):       RANDOX LAB LTD
PATENT INFORMATION:

     PATENT NO       KIND   DATE        ERA     MAIN IPC
     -------------------------------------------------------
     JP 11243992     A      19990914  Heisei  C12Q001-28

APPLICATION INFORMATION
     STN FORMAT:          JP 1998-326639        19981117
     ORIGINAL:            JP10326639            Heisei
PRIORITY APPLN. INFO.:    EP 1997-309322      19971119
SOURCE:                   PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined
                          Applications, Vol. 1999
AN    1999-243992    JAPIO  Full-text
AB     PROBLEM TO BE SOLVED: To provide a method enabling a test on the water quality
       with a simple operation, and to provide a sol- gel containing reactant
       suitable for the test.  SOLUTION: The first and second reactants giving a
       signal when mixed with each other in the presence of an analyte in a liquid
       specimen are separately contained in a sol- gel releasing the reactants in the
       presence of a liquid. For example, when the first and second reactants are an
       oxidant and a reluctant, respectively, and when the reaction of the reactants
       gives a detectable signal, the presence of a pollutant in a water specimen cab
       be detected with the system. The sol- gel can be obtained by reacting 1
       pt.volume of water with at least 2 pts.volume of a metal alkoxide and
       subsequently drying the obtained gel.
       COPYRIGHT: (C)1999,JPO
IC    ICM  C12Q001-28
ICA   C08L083-02; G01N033-18

L134 ANSWER 62 OF 76  JAPIO  (C) 2008 JPO  on STN
ACCESSION NUMBER:         1999-080585    JAPIO  Full-text
TITLE:                    FINE PIECES OF METAL HAVING EMBOSS
                          PATTERN AND ITS PRODUCTION
INVENTOR:                 KATO AKIRA; YAMAMURA NOBUHIRO; KATSUMATA
                          TAKATOSHI; OKOCHI YUKIO; KIMOTO HIROYUKI;
                          NAKANISHI MASAJI
PATENT ASSIGNEE(S):       TOYOTA MOTOR CORP
PATENT INFORMATION:

     PATENT NO       KIND   DATE        ERA     MAIN IPC
     -------------------------------------------------------
     JP 11080585     A      19990326  Heisei  C09C001-62

APPLICATION INFORMATION
     STN FORMAT:          JP 1998-96698         19980325
     ORIGINAL:            JP10096698            Heisei
PRIORITY APPLN. INFO.:    JP 1997-181367      19970707
SOURCE:                   PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined
                          Applications, Vol. 1999
AN    1999-080585    JAPIO  Full-text
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AB PROBLEM TO BE SOLVED: To produce fine pieces of a metal having embossed patterns that can be readily produced and has high resistance to scratching and to provide a production method therefor. SOLUTION: On the obverse and reverse faces of a supporting layer made of PVA film or the like, organic and inorganic composite material layers 12 are deep-coated by a sol-gel process and the organic and inorganic composite material layers are pressed with emboss pattern plates each having an embossing pattern on their surfaces thereby transferring the emboss patterns. The specimen having emboss patterns transferred is fired and a thin metallic layer 10 is metallized on both the organic and inorganic composite material layers 12. In addition, the organic and inorganic composite material layers 12 are deep- coated further on the metallic thin layers 10 by the sol-gel process and the deep-coated layers are fired. Then, the supporting (the PVA film) layer is dissolved with water and the metallic thin layers 10 between the organic and inorganic composite layers formed on the supporting layer is peeled off and crushed, thereby giving fine pieces of a metal with embossed patterns.
COPYRIGHT: (C)1999,JPO

IC ICM C09C001-62
ICS C09C003-04

L134 ANSWER 63 OF 76 JAPIO (C) 2008 JPO on STN

ACCESSION NUMBER: 1997-178392 JAPIO Full-text

TITLE: MANUFACTURE OF HEAT EXCHANGER MADE OF ALUMINUM AND BEING EXCELLENT IN CORROSION RESISTANCE

INVENTOR: SHIMAKAGE KAZUNOBU; HIRAI SHINJI; KANAI TOMIYOSHI; MAKITA ISAO; KONDO MIKIO

PATENT ASSIGNEE(S): SHOWA ALUM CORP

PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 09178392	A	19970711	Heisei	F28F019-06

APPLICATION INFORMATION

STN FORMAT: JP 1995-335344 19951222

ORIGINAL: JP07335344 Heisei

PRIORITY APPLN. INFO.: JP 1995-335344 19951222

SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1997

AN 1997-178392 JAPIO Full-text

AB PROBLEM TO BE SOLVED: To manufacture a heat exchanger made of aluminum and being excellent in corrosion resistance without causing a problem of pollution due to release of sexivalent chromium and the like, by coating the surface with a metal oxide film by a sol-gel process.
SOLUTION: A plurality of flat tube elements 1 each of which is formed by joining the peripheral end parts of paired core plates 3 by soldering and has a refrigerant passage inside and a plurality of corrugated fins 2 are stacked alternately and soldered, while side plates 4 are placed outside the outermost fins 2 and an inlet header 5 and an outlet header are provided. On the other hand, a sol solution of a metal oxide is prepared and made to stick on the stacked type heat exchanger by a dip coating method. Next, the heat exchanger whereon the sol solution sticks is subjected to a drying treatment by leaving it in the atmosphere at room temperature and then subjected to a heating treatment in the atmosphere of oxygen. These processes from sticking to heating are repeated. Herein the metal oxide is an oxide of Zr, Ti, Hf or Al.
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IC ICM F28F019-06

L134 ANSWER 64 OF 76 JAPIO (C) 2008 JPO on STN

ACCESSION NUMBER: 1996-030039 JAPIO Full-text

TITLE: ELECTROSTATIC CHARGE IMAGE DEVELOPING CARRIER, TWO-COMPONENT DEVELOPER AND THEIR PRODUCTION
INVENTOR: ONO HITOSHI; TAKAHASHI NORIAKI; KOIZUMI KATSUO; ODA HIROBUMI
PATENT ASSIGNEE(S): MITSUBISHI CHEM CORP
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 08030039	A	19960202	Heisei	G03G009-113

APPLICATION INFORMATION
STN FORMAT: JP 1994-163716 19940715
ORIGINAL: JP06163716 Heisei
PRIORITY APPLN. INFO.: JP 1994-163716 19940715
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1996

AN 1996-030039 JAPIO Full-text

AB PURPOSE: To provide an electrostatic charge image developing carrier which is formed by uniformly coating the surfaces of core materials, has excellent coatability with no exposed parts, features a good adhesion property and hardly peels the coating films, a two-component developer formed by using such carrier and process for producing the same.
CONSTITUTION: This electrostatic charge image developing carrier is formed by coating at least part of the surfaces of the granular carrier core materials with a metal oxide formed by a sol-gel method and this two-component developer contains such carrier and a positive charge type toner. This process for producing the electrostatic charge image developing carrier comprises immersing the granular carrier core materials into a solution containing a metal alkoxide, then taking out the core materials and heating the core materials, thereby forming the coating films of the metal oxide on the surfaces of the granular carrier core materials. This process for producing the two-component developer comprises mixing the carrier obtd. by this process and the positive charge type toner. COPYRIGHT: (C)1996,JPO

IC ICM G03G009-113
ICS G03G009-087

L134 ANSWER 65 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 1994-041718 JAPIO Full-text
TITLE: SURFACE TREATMENT OF HEAT RESISTANT MATERIAL
INVENTOR: NAKAGAWA HIROKATSU; ISOZAKI YOSHIICHI
PATENT ASSIGNEE(S): ISHIKAWAJIMA HARIMA HEAVY IND CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 06041718	A	19940215	Heisei	C23C008-52

APPLICATION INFORMATION
STN FORMAT: JP 1992-201515 19920728
ORIGINAL: JP04201515 Heisei
PRIORITY APPLN. INFO.: JP 1992-201515 19920728
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994

AN 1994-041718 JAPIO Full-text

AB PURPOSE: To improve the oxidation resistance of the surface of a heat resistant material made of a specified intermetallic compound by preoxidizing the surface of the heat resistant material and forming an SiO<SB>2</SB>-based protective film having a specified compsn. by a sol-gel process.

CONSTITUTION: A heat engine made of a heat resistant intermetallic compound such as TiAl is preoxidized by heating to >=600°C under atmospheric pressure to form a thin oxidized layer with fine metal oxide on the surface of the engine. An SiO<SB>2</SB>-based protective film containing 0.1-3vol.% Y<SB>2</SB>O<SB>3</SB> and/or 1-3vol.% ZrO<SB>2</SB> and excellent in adhesion and film stability is then formed by a sol- gel process. The oxidation resistance of the surface of the engine at high temperature is improved.
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IC ICM C23C008-52
ICS C23C008-02; C23D005-00; C23D005-02

L134 ANSWER 66 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 1993-306472 JAPIO Full-text
TITLE: COATED METALLIC TABLEWARE
INVENTOR: IZUMI KEIJI; EMURA MASAKAZU; SUZUKI MASARU; KANESASHI HISAYOSHI
PATENT ASSIGNEE(S): NISSHIN STEEL CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 05306472	A	19931119	Heisei	C23C024-08

APPLICATION INFORMATION
STN FORMAT: JP 1992-140142 19920430
ORIGINAL: JP04140142 Heisei
PRIORITY APPLN. INFO.: JP 1992-140142 19920430
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993

AN 1993-306472 JAPIO Full-text

AB PURPOSE: To obtain a metallic tableware excellent in resistance against contamination by fingerprints without imparting the metal's characteristic malodor to poured boiling water, hot water or the like.
CONSTITUTION: The metallic tableware is covered with a transparent ceramic coating layer formed by sol-gel method on the metallic base body. SiO<SB>2</SB> base, Al<SB>2</SB>O<SB>3</SB> base, TiO<SB>2</SB> base, ZrO<SB>2</SB> base or the like is used as the ceramic coating layer. As a result, the ceramic coating layer keeps metal's characteristic surface luster and suppresses the elusion of metallic ion from the metallic base body which is the cause of malodor. The resistance against contamination by fingerprints is improved. Furthermore, a tableware excellent in design is obtained because the ceramic coating layer is colored by selecting the kinds of adding component.
COPYRIGHT: (C)1993,JPO&Japio

IC ICM C23C024-08
ICS A47G019-00; C23C026-00

L134 ANSWER 67 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 1992-247886 JAPIO Full-text
TITLE: METHOD FOR GLASS COATING
INVENTOR: HARA TATSUO; MAESETO TOMOHARU; KAMIGAKI SHIGEO
PATENT ASSIGNEE(S): SHINKO PANTEC CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 04247886	A	19920903	Heisei	C23D005-00

APPLICATION INFORMATION
STN FORMAT: JP 1991-5656 19910122

ORIGINAL: JP03005656 Heisei
PRIORITY APPLN. INFO.: JP 1991-5656 19910122
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1992

AN 1992-247886 JAPIO Full-text

AB PURPOSE: To offer such a glass coating method by which a vitreous coating layer as thick as a porcelain enamel layer can be formed without causing cracks in the coating layer during forming the coating layer on a base material by a sol-gel method, and moreover, by which the process time to form the coating layer is largely reduced compared to a conventional sol- gel method.

CONSTITUTION: A mixture of a liquid containing an organic metal compound, inorg. powder and acid catalyst, and another mixture of liquid containing an organic metal compound, inorg. powder and alkali catalyst are alternately applied on the surface of a metal base material to make a gel. Then, this gel is heated and calcined to form a vitreous coating layer. COPYRIGHT: (C)1992,JPO&Japio

IC ICM C23D005-00
ICS C03B008-02; C03C008-24; C23D005-02

L134 ANSWER 68 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 1991-089973 JAPIO Full-text
TITLE: CERAMIC PAINTING METHOD AND CERAMIC PAINTED CAR BODY
INVENTOR: HAYAKAWA KAZUTOSHI
PATENT ASSIGNEE(S): MITSUBISHI MOTORS CORP
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 03089973	A	19910415	Heisei	B05D007-24

APPLICATION INFORMATION
STN FORMAT: JP 1989-224959 19890831
ORIGINAL: JP01224959 Heisei
PRIORITY APPLN. INFO.: JP 1989-224959 19890831
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991

AN 1991-089973 JAPIO Full-text

AB PURPOSE: To apply strong and thin ceramic coating having abrasion resistance, corrosion resistance, heat resistance and long life by painting the surface of a metal with a solution consisting of a reaction solution having a specific composition and organic paint and drying the painting layer before baking the same at a relatively low temperature

CONSTITUTION: A solution consisting of a sol/gel method reaction solution consisting of metal alkoxide, water and a reaction inhibitor and usual organic paint is applied to a partener material and the painting layer is baked at a relatively low temperature For example, a truck cabin 1 is transported along a hanging rail 5 to stop directly above a painting solution tank 6 and immersed in the painting solution tank 6 and subsequently drawn up to be sent to a drying process to be baked herein at a relatively low temperature At this time, the sol/gel method reaction solution and the organic paint mutually form a solution in the tank 6 and the rapid reaction forming metal oxide due to hydrolysis is appropriately suppressed by the action of the reaction inhibitor and a thin ceramic film is formed.

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IC ICM B05D007-24
ICS B05D007-14; C23C030-00

L134 ANSWER 69 OF 76 JAPIO (C) 2008 JPO on STN

ACCESSION NUMBER: 1990-160608 JAPIO Full-text
TITLE: SURFACE-MODIFICATION OF POWDER, POWDER, AGGREGATE AND COMPOSITION COMPOSED THEREOF
INVENTOR: KANZAKI TOSHIO; TERASAWA HIROAKI; SUEYOSHI TOSHINOBU
PATENT ASSIGNEE(S): HITACHI MAXELL LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 02160608	A	19900620	Heisei	C01B013-14

APPLICATION INFORMATION
STN FORMAT: JP 1988-313606 19881212
ORIGINAL: JP63313606 Showa
PRIORITY APPLN. INFO.: JP 1988-313606 19881212
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990

AN 1990-160608 JAPIO Full-text

AB PURPOSE: To improve the function of inorganic powder pigment or reinforcing material as an aggregate for a molding material such as plastics by using inorganic powder having metal oxide as the surface layer and coating the surface with a layer of a metal oxide different from the above metal oxide.
CONSTITUTION: The surface of powder containing the 1st metal oxide at least on the surface is coated with a layer of the 2nd metal oxide different from the 1st metal. The surface of an oxide can be easily modified to a desired state and an aggregate or composition having excellent mechanical properties can be produced by this process. There is no restriction in the process for the production of the powder and aggregate, however, the coating is preferably carried out by a process for forming a uniform coating film, e.g. a sol-gel process. The 2nd metal oxide used as the surface-modifying material is preferably a substance capable of varying the surface property, especially the acidity of the 1st metal oxide.
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IC ICM C01B013-14
ICS C01B033-18
ICA C09C003-06

L134 ANSWER 70 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 1989-232034 JAPIO Full-text
TITLE: FLEXIBLE COMPOSITE FILM
INVENTOR: FUJII SADAO
PATENT ASSIGNEE(S): KANEGAFUCHI CHEM IND CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 01232034	A	19890918	Heisei	B32B015-08

APPLICATION INFORMATION
STN FORMAT: JP 1988-58801 19880311
ORIGINAL: JP63058801 Showa
PRIORITY APPLN. INFO.: JP 1988-58801 19880311
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989

AN 1989-232034 JAPIO Full-text

AB PURPOSE: To manufacture a flexible composite film of superior resistance to humidity and insulation properties suitable for a flexible print board or the like by providing an insulated layer composed of metal oxide on the surface of

a high molecular film and further providing a conductive layer over the insulated layer.
CONSTITUTION: For example, a Si or Al oxide is formed into an insulated metal oxide layer by using the vacuum film forming technology or the sol-gel process using an organic metallic compound on the surface of a flexible polymer film such as polyethylene, polypropylene or the like. A conductive layer is formed on its both surfaces or one surface to form a flexible print board. As the subject composite film retains a metal oxide layer, insulated and resistant to humidity, on its surface or intermediate layer as above-mentioned, moisture absorbing deformation of polymer film can be prevented and its surface resistance can be retained high.
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IC ICM B32B015-08
ICS B32B007-02; B32B007-02; H05K001-03

L134 ANSWER 71 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 2003-327782 JAPIO Full-text
TITLE: SILICON RESIN COMPOSITION AND PROCESS FOR FORMING INORGANIC POROUS THIN FILM
INVENTOR: MATSUKAWA KOYO; MATSUURA YUKITO; INOUE HIROSHI
PATENT ASSIGNEE(S): MATSUKAWA KOYO
MATSUURA YUKITO
INOUE HIROSHI
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2003327782	A	20031119	Heisei	C08L053-00

APPLICATION INFORMATION
STN FORMAT: JP 2002-138886 20020514
ORIGINAL: JP2002138886 Heisei
PRIORITY APPLN. INFO.: JP 2002-138886 20020514
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2003

AN 2003-327782 JAPIO Full-text

AB PROBLEM TO BE SOLVED: To provide a silicon resin composition which can be suitably used for easily forming an inorganic porous thin film at a low cost, and a process for forming the inorganic porous thin film by using this.
SOLUTION: The silicon resin composition contains a block copolymer of a polysilane and a vinyl monomer and a sol-gel reactive metal compound. In the formation process, the silicon resin composition is applied onto a substrate and heated and cured at 50-250°C to form a hybrid thin film comprising the block copolymer of the polysilane and the vinyl monomer and a metal oxide. Then, the surface of the film is exposed to an active energy beam irradiation to decompose the polysilane part in the copolymer, and the decomposition product is removed by a solvent.
COPYRIGHT: (C)2004,JPO

IC ICM C08L053-00
ICS C08K005-057

L134 ANSWER 72 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 2003-215837 JAPIO Full-text
TITLE: TONER COMPOSITION WITH SURFACE ADDITIVE AND METHOD FOR MANUFACTURING THE SAME
INVENTOR: COMBES JAMES R; VEREGIN RICHARD P N; MCSTRAVICK MARY L; KOCH RONALD J; VAN LAEKEN ANITA C; HSIEH BING R
PATENT ASSIGNEE(S): XEROX CORP
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2003215837	A	20030730	Heisei	G03G009-08

APPLICATION INFORMATION
STN FORMAT: JP 2003-5962 20030114
ORIGINAL: JP2003005962 Heisei
PRIORITY APPLN. INFO.: US 2002-683544 20020116
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2003
AN 2003-215837 JAPIO Full-text
AB PROBLEM TO BE SOLVED: To provide a toner composition containing a binder, a colorant, and surface-treated sol-gel metal oxide particles surface-treated with a treatment agent, and to provide a method for manufacturing the composition. SOLUTION: The toner composition contains a binder, a colorant and surface- treated sol-gel metal oxide particles surface-treated with a treatment agent. The sol-gel metal oxide can be sol-gel silica. The treating agent can be polytetrafluoroethylene or decyltrimethoxysilane. The method for manufacturing the toner composition is also presented. COPYRIGHT: (C)2003,JPO
IC ICM G03G009-08

L134 ANSWER 73 OF 76 JAPIO (C) 2008 JPO on STN
ACCESSION NUMBER: 2001-350015 JAPIO Full-text
TITLE: MULTILAYERED HETEROSTRUCTURE FILM, OPTICAL DEVICE USING THE SAME AND METHOD FOR MANUFACTURING THE SAME
INVENTOR: SHIRATORI TOKIAKI
PATENT ASSIGNEE(S): KEIO GIJUKU
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2001350015	A	20011221	Heisei	G02B005-28

APPLICATION INFORMATION
STN FORMAT: JP 2000-173648 20000609
ORIGINAL: JP2000173648 Heisei
PRIORITY APPLN. INFO.: JP 2000-173648 20000609
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2001
AN 2001-350015 JAPIO Full-text
AB PROBLEM TO BE SOLVED: To form a multilayered heterostructure film over a large area.
SOLUTION: Inorganic material layers X1 to X7 and organic material layers Y2 to Y6 are formed alternately on a glass substrate 10 to obtain the multilayered heterostructure film. The inorganic material layers X1 to X7 are formed by a sol-gel method to form solid metal oxide layers through the liquid, sol and gel phases carried out by dipping the substrate 10 coated with OH- groups through preliminary surface treatment in a metal alkoxide solution, treating in a rinsing bath and then subjecting to a hydrolysis process. The organic material layers Y2 to Y6 are formed in the layer-by-layer electrostatic self-assembly process by alternately dipping the substrate 10 in a positive electrolyte polymer solution and in a negative electrolyte polymer solution. By selecting the refractive index and thickness of each layer, the multilayered heterostructure film having desired optical characteristics can be formed, and this results in an optical reflection film, transmission film, optical resonator or the like.
COPYRIGHT: (C)2001,JPO

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IC    ICM  G02B005-28
      ICS  G02B005-08; G02B005-26
ICA   H01L051-00

L134 ANSWER 74 OF 76  JAPIO  (C) 2008 JPO  on STN
ACCESSION NUMBER:         2001-253705    JAPIO  Full-text
TITLE:                    ORGANIC/INORGANIC COMPOSITE BODY HAVING SPIRAL
                          STRUCTURE HAVING CONTROLLED SPIRAL DIRECTION,
                          METAL OXIDE AND MANUFACTURING METHOD
                          THEREOF
INVENTOR:                 ONO YOSHIYUKI; TEI SHIYOUWA; SHINKAI SEIJI
PATENT ASSIGNEE(S):       JAPAN SCIENCE & TECHNOLOGY CORP
                          ONO YOSHIYUKI
PATENT INFORMATION:

     PATENT NO       KIND   DATE        ERA     MAIN IPC
     -------------------------------------------------------
     JP 2001253705    A      20010918  Heisei  C01B013-32

APPLICATION INFORMATION
     STN FORMAT:          JP 2000-68044          20000313
     ORIGINAL:            JP2000068044           Heisei
PRIORITY APPLN. INFO.:    JP 2000-68044       20000313
SOURCE:                   PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined
                          Applications, Vol. 2001
AN    2001-253705    JAPIO  Full-text
AB    PROBLEM TO BE SOLVED: To provide a technique for manufacturing a micro
      structural body having a spiral structure useful as a catalyst for a reaction,
      in which chirality participates, and having a fixed direction.
      SOLUTION: The manufacturing method of an organic/inorganic composite body
      formed by depositing the metal oxide on the surface of a chiral organic
      compound having the fixed directional spiral structure comprizes (1) a process
      for preparing (a) a mixture of an ionic chiral organic compound capable of
      forming a gel in a solvent with a nonionic chiral organic compound having the
      same chirality as the said organic compound and capable of forming a gel in a
      solvent and (b) a sol-gel reaction solution containing a metal oxide polymer
      formed from a precursor of the metal oxide by a sol- gel reaction, (2) a
      process for forming the gel of the organic chiral compound by (a) removing the
      solvent from the uniform liquid mixture, (b) cooling the uniform liquid
      mixture after heating or (c) cooling the uniform liquid mixture and (3) a
      process for holding the system, in which the gel is formed, and advancing the
      polymerization of the metal oxide. COPYRIGHT: (C)2001,JPO
IC    ICM  C01B013-32
      ICS  B01J021-08; C01B033-12; C07C233-41; C07C237-04

L134 ANSWER 75 OF 76  JAPIO  (C) 2008 JPO  on STN
ACCESSION NUMBER:         2000-164909    JAPIO  Full-text
TITLE:                    THIN-FILM SOLAR CELL AND MANUFACTURE OF IT
INVENTOR:                 KAJIMOTO ATSUSHI; KOURA SETSUKO; SAKADO KENJI
PATENT ASSIGNEE(S):       NISSHIN STEEL CO LTD
PATENT INFORMATION:

     PATENT NO       KIND   DATE        ERA     MAIN IPC
     -------------------------------------------------------
     JP 2000164909    A      20000616  Heisei  H01L031-04

APPLICATION INFORMATION
     STN FORMAT:          JP 1998-339748         19981130
     ORIGINAL:            JP10339748             Heisei
PRIORITY APPLN. INFO.:    JP 1998-339748      19981130
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SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000

AN 2000-164909 JAPIO Full-text

AB PROBLEM TO BE SOLVED: To improve insulation characteristics and adhesion with an electrode material which are required for a solar cell insulating substrate by forming a lower-layer insulating coat and upper-layer insulating coat by sol-gel process.
SOLUTION: On the surface of a metal plate 1 which is base material, a lower part electrode 4, a thin-film semiconductor layer 5, an upper part electrode 6 are formed through a lower-layer insulating coat 2 and an upper-layer insulating coat 3 of thickness 0.5-10 μm which are formed by sol-gel process. An insulating powder 4 with visible-light reflectivity 70% or more may be dispersed in the insulating coats 2 and 3. A silica-group film with high insulation characteristics is used as the lower-layer insulating coat 2. The upper-layer insulating coat 3 is made ino a film which is excellent in adhesion with the lower part electrode 4 formed over it. COPYRIGHT: (C)2000,JPO

IC ICM H01L031-04

L134 ANSWER 76 OF 76 JAPIO (C) 2008 JPO on STN

ACCESSION NUMBER: 2000-044392 JAPIO Full-text

TITLE: PREPARATION OF CERAMIC MEMBRANE

INVENTOR: KITAOKA KENJI

PATENT ASSIGNEE(S): MINOLTA CO LTD

PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2000044392	A	20000215	Heisei	C30B029-32

APPLICATION INFORMATION

STN FORMAT: JP 1998-207923 19980723

ORIGINAL: JP10207923 Heisei

PRIORITY APPLN. INFO.: JP 1998-207923 19980723

SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000

AN 2000-044392 JAPIO Full-text

AB PROBLEM TO BE SOLVED: To attain crystal growth and its densification at a relatively low temperature by dispersing an amorphous powder prepared by the sol-gel process in a gel prepared by the solgel process and applying the resultant slurry in a thin layer and crystallizing the thin layer by heat treatment. SOLUTION: A sol prepared from a solution containing metallic ions of lead, zirconium, and titanium through the sol- gel technique is dried to obtain a dry gel. This dry gel 12 is put in a sample dish 16 that is placed on a bed 14 and the dish is set in the pressure vessel 22 equipped with a pressure relief valve 18 and a pressure gauge 20 and water 24 is introduced into the periphery of the bed 14. This pressure vessel 22 is placed inside the oven 26 and heated to hydrolyze and crush the dry gel thereby forming an amorphous powder with an average particle size of <=0.5 μm. This amorphous powder is dispersed in the sol prepared by the solgel method and the resultant slurry is applied in a thin layer and crystallized by heat-treatment at 700-800°C. COPYRIGHT: (C)2000,JPO

IC ICM C30B029-32
ICS B05D003-00; C04B035-49; C30B001-02; H01L041-09; H01L041-187; H01L041-22

ICA B41J002-045; B41J002-055

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=> d his nofile

     (FILE 'HOME' ENTERED AT 08:24:27 ON 25 APR 2008)

     FILE 'HCAPLUS' ENTERED AT 08:24:46 ON 25 APR 2008
L1            1 SEA ABB=ON  PLU=ON  US20050158862/PN
                SEL RN
                E  SOL-GEL PROCESSING/CT
L2        26268 SEA ABB=ON  PLU=ON  "SOL-GEL PROCESSING"+PFT,NT/CT
                E  COLORIMETRY/CT
L3         7088 SEA ABB=ON  PLU=ON  COLORIMETRY+PFT,NT/CT
L4       106911 SEA ABB=ON  PLU=ON  METAL(3A)SURFACE#
L5          375 SEA ABB=ON  PLU=ON  L4 AND (L2 OR SOL(A)GEL?)
L6          210 SEA ABB=ON  PLU=ON  L5 AND COAT?
L7            7 SEA ABB=ON  PLU=ON  L6 AND (L3 OR COLOR? OR COLOUR?)
L8              QUE ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                BOXES OR CAN# OR JAR#
L9           45 SEA ABB=ON  PLU=ON  L8 AND L6
L10           1 SEA ABB=ON  PLU=ON  L9 NOT CAN#
L11             QUE ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                BOXES OR JAR#
L12           2 SEA ABB=ON  PLU=ON  L6 AND L11
L13        5140 SEA ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR ONE)(3A)SPECIM
                EN#
L14       38555 SEA ABB=ON  PLU=ON  (SECOND OR 2ND OR 2 ND OR TWO)(3A)(SPEC
                IMEN# OR SAMPLE#)
L15       40306 SEA ABB=ON  PLU=ON  (FIRST OR 1ST OR 1 ST OR ONE)(3A)(SPECI
                MEN# OR SAMPLE#)
L16           0 SEA ABB=ON  PLU=ON  L5 AND L14 AND L15
L17           8 SEA ABB=ON  PLU=ON  L2 AND L14 AND L15
L18             QUE ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR
                SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR
                PANE? OR DISK? OR DISC# OR WAFER?
L19           6 SEA ABB=ON  PLU=ON  L17 AND L18
L20           8 SEA ABB=ON  PLU=ON  L17 OR L19
L21          11 SEA ABB=ON  PLU=ON  L2 AND L3
L22         375 SEA ABB=ON  PLU=ON  L5 AND L18
L23           0 SEA ABB=ON  PLU=ON  L22 AND L13 AND L14
L24          32 SEA ABB=ON  PLU=ON  L22 AND (SPECIMEN# OR SAMPLE#)
L25          15 SEA ABB=ON  PLU=ON  L24 AND COAT?
L26           0 SEA ABB=ON  PLU=ON  L25 AND L11
L27        5466 SEA ABB=ON  PLU=ON  L14 AND L15
L28         116 SEA ABB=ON  PLU=ON  L27 AND L11
L29           2 SEA ABB=ON  PLU=ON  L28 AND (L2 OR SOL(A)GEL?)
L30           9 SEA ABB=ON  PLU=ON  L28 AND (L3 OR COLOR? OR COLOUR?)
L31             QUE ABB=ON  PLU=ON  RECEPTACLE# OR CONTAINER# OR BOX OR
                BOXES OR JAR# OR CARTRIDG?
L32         129 SEA ABB=ON  PLU=ON  L27 AND L31
L33           2 SEA ABB=ON  PLU=ON  L32 AND (L2 OR SOL(A)GEL?)
L34           9 SEA ABB=ON  PLU=ON  L32 AND (L3 OR COLOR? OR COLOUR?)
L35          50 SEA ABB=ON  PLU=ON  L7 OR L12 OR L16 OR L17 OR L19 OR L20
                OR L21 OR L23 OR L25 OR L26 OR L29 OR L30 OR L33 OR L34
L36          13 SEA ABB=ON  PLU=ON  L35 AND ALLOY?/SC,SX
L37          22 SEA ABB=ON  PLU=ON  L33 OR L34 OR L36
L38           5 SEA ABB=ON  PLU=ON  L37 AND TEST#
L39          22 SEA ABB=ON  PLU=ON  L37 OR L38
L40          25 SEA ABB=ON  PLU=ON  L35 AND METAL?
L41          35 SEA ABB=ON  PLU=ON  L39 OR L40
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L42          21 SEA ABB=ON  PLU=ON  L41 AND (1840-2004)/PRY,AY,PY
L43           1 SEA ABB=ON  PLU=ON  L42 AND L1

     FILE 'WPIX' ENTERED AT 08:57:15 ON 25 APR 2008
L44        6554 SEA ABB=ON  PLU=ON  SOL(A)GEL?
L45           7 SEA ABB=ON  PLU=ON  L44 AND L14 AND L15
L46           1 SEA ABB=ON  PLU=ON  US20050158862/PN
L47           0 SEA ABB=ON  PLU=ON  L45 AND L46
L48         195 SEA ABB=ON  PLU=ON  L44 AND L4
L49         123 SEA ABB=ON  PLU=ON  L48 AND COAT?
L50          17 SEA ABB=ON  PLU=ON  L49 AND (COLOR? OR COLOUR?)
L51           0 SEA ABB=ON  PLU=ON  L50 AND L31
L52          25 SEA ABB=ON  PLU=ON  (L45 OR L46 OR L47) OR (L50 OR L51)
L53          18 SEA ABB=ON  PLU=ON  L52 AND (PY<2005 OR PRY<2005 OR
                AY<2005)
L54           1 SEA ABB=ON  PLU=ON  L46 AND L53

     FILE 'PASCAL' ENTERED AT 09:03:48 ON 25 APR 2008
L55       23791 SEA ABB=ON  PLU=ON  SOL(A)GEL?
L56           6 SEA ABB=ON  PLU=ON  L55 AND L14 AND L15
L57           0 SEA ABB=ON  PLU=ON  L56 AND  (COLOR? OR COLOUR?)
L58          71 SEA ABB=ON  PLU=ON  L55 AND L31
L59           0 SEA ABB=ON  PLU=ON  L58 AND L4
L60          30 SEA ABB=ON  PLU=ON  L58 AND COAT?
L61           3 SEA ABB=ON  PLU=ON  L60 AND (SPECIMEN# OR SAMPLE#)
L62           3 SEA ABB=ON  PLU=ON  L61 AND L18
L63           1 SEA ABB=ON  PLU=ON  L62 AND METAL?
L64           3 SEA ABB=ON  PLU=ON  L57 OR L59 OR (L61 OR L62 OR L63)

     FILE 'COMPENDEX' ENTERED AT 09:08:09 ON 25 APR 2008
L65       28871 SEA ABB=ON  PLU=ON  SOL(A)GEL?
L66         114 SEA ABB=ON  PLU=ON  L65 AND L4
L67           0 SEA ABB=ON  PLU=ON  L66 AND L14 AND L15
L68          19 SEA ABB=ON  PLU=ON  L66 AND (SPECIMEN# OR SAMPLE#)
L69           0 SEA ABB=ON  PLU=ON  L68 AND  (COLOR? OR COLOUR?)
L70           9 SEA ABB=ON  PLU=ON  L68 AND COAT?
L71           9 SEA ABB=ON  PLU=ON  L67 OR L69 OR L70
L72           0 SEA ABB=ON  PLU=ON  L71 AND L31
L73           9 SEA ABB=ON  PLU=ON  L71 OR L72
L74           2 SEA ABB=ON  PLU=ON  L73 AND (PY<2005 OR PRY<2005 OR
                AY<2005)


     FILE 'JAPIO' ENTERED AT 09:55:08 ON 25 APR 2008
L75        2529 SEA ABB=ON  PLU=ON  SOL(A)GEL?
L76          50 SEA ABB=ON  PLU=ON  L75 AND L4
L77           0 SEA ABB=ON  PLU=ON  L76 AND (L14 OR L15 OR SPECIMEN# OR
                SAMPLE#)
L78           2 SEA ABB=ON  PLU=ON  L76 AND (COLOR? OR COLOUR?)
L79           0 SEA ABB=ON  PLU=ON  L77 AND L18
L80          50 SEA ABB=ON  PLU=ON  L76 AND L18
L81           0 SEA ABB=ON  PLU=ON  L50 AND L31
L82          14 SEA ABB=ON  PLU=ON  L76 AND PROCESS?
L83          16 SEA ABB=ON  PLU=ON  L77 OR L78 OR L79 OR L81 OR L82
L84          13 SEA ABB=ON  PLU=ON  L83 AND (PY<2005 OR PRY<2005 OR
                AY<2005)
L85          15 SEA ABB=ON  PLU=ON  L75 AND (SPECIMEN# OR SAMPLE#)
L86           0 SEA ABB=ON  PLU=ON  L85 AND (COLOR? OR COLOUR?)
L87           1 SEA ABB=ON  PLU=ON  L85 AND COAT?
L88           0 SEA ABB=ON  PLU=ON  L85 AND LENGTH(3A)TIME?
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L89           3 SEA ABB=ON  PLU=ON  L85 AND (TIME OR TIMING)
L90           0 SEA ABB=ON  PLU=ON  L85 AND L31
L91          28 SEA ABB=ON  PLU=ON  (L84 OR L85 OR L86 OR L87 OR L88 OR
                L89 OR L90)
L92          16 SEA ABB=ON  PLU=ON  L91 AND METAL?
L93          16 SEA ABB=ON  PLU=ON  L92 AND (PY<2005 OR PRY<2005 OR
                AY<2005)
L94          16 SEA ABB=ON  PLU=ON  L84 OR L93

     FILE 'COMPENDEX' ENTERED AT 10:02:57 ON 25 APR 2008
L95        5153 SEA ABB=ON  PLU=ON  L75 AND (SPECIMEN# OR SAMPLE#)
L96         122 SEA ABB=ON  PLU=ON  L95 AND (COLOR? OR COLOUR?)
L97           9 SEA ABB=ON  PLU=ON  L96 AND TEST?
L98           6 SEA ABB=ON  PLU=ON  L97 AND L18
L99           1 SEA ABB=ON  PLU=ON  L96 AND L31
L100          0 SEA ABB=ON  PLU=ON  L96 AND L4
L101         40 SEA ABB=ON  PLU=ON  L96 AND COAT?
L102         29 SEA ABB=ON  PLU=ON  L101 AND (METHOD? OR PROCESS?)
L103         32 SEA ABB=ON  PLU=ON  L98 OR L99 OR L100 OR L102
L104          7 SEA ABB=ON  PLU=ON  L103 AND TEST?
L105          8 SEA ABB=ON  PLU=ON  L103 AND (TIME OR TIMING)
L106         12 SEA ABB=ON  PLU=ON  L104 OR L105
L107         12 SEA ABB=ON  PLU=ON  L106 AND (COLOR? OR COLOUR?)
L108         10 SEA ABB=ON  PLU=ON  L107 AND  (PY<2005 OR PRY<2005 OR
                AY<2005)
L109         12 SEA ABB=ON  PLU=ON  L108 OR L74

     FILE 'PASCAL' ENTERED AT 10:10:05 ON 25 APR 2008
L110        172 SEA ABB=ON  PLU=ON  L95 AND (COLOR? OR COLOUR?)
L111        160 SEA ABB=ON  PLU=ON  L110 AND (METHOD? OR PROCESS?)
L112         47 SEA ABB=ON  PLU=ON  L111 AND COAT?
L113         14 SEA ABB=ON  PLU=ON  L112 AND TEST?
L114          4 SEA ABB=ON  PLU=ON  L111 AND COAT?(5A)TEST?
L115          5 SEA ABB=ON  PLU=ON  L113 AND (TIME OR TIMING)
L116          0 SEA ABB=ON  PLU=ON  L115 AND CHANGE(3A)(COLOR? OR COLOUR?)
L117          0 SEA ABB=ON  PLU=ON  L115 AND CHANG?(3A)(COLOR? OR COLOUR?)
L118          7 SEA ABB=ON  PLU=ON  (L114 OR L115 OR L116 OR L117)
L119          7 SEA ABB=ON  PLU=ON  L118 AND (PY<2005 OR PRY<2005 OR
                AY<2005)
L120         10 SEA ABB=ON  PLU=ON  L64 OR L119

     FILE 'WPIX' ENTERED AT 10:21:27 ON 25 APR 2008
L121         40 SEA ABB=ON  PLU=ON  L110 AND (METHOD? OR PROCESS?)
L122          1 SEA ABB=ON  PLU=ON  L121 AND COAT?(5A)TEST?
L123         22 SEA ABB=ON  PLU=ON  L121 AND COAT?
L124          3 SEA ABB=ON  PLU=ON  L123 AND (TIME OR TIMING)
L125          6 SEA ABB=ON  PLU=ON  L123 AND (COLOR? OR COLOUR?)(3A)CHANG?
L126          8 SEA ABB=ON  PLU=ON  L122 OR L124 OR L125
L127          5 SEA ABB=ON  PLU=ON  L126 AND METAL?
L128          1 SEA ABB=ON  PLU=ON  L127 AND L31
L129          5 SEA ABB=ON  PLU=ON  L127 OR L128
L130          4 SEA ABB=ON  PLU=ON  L129 AND (PY<2005 OR PRY<2005 OR
                AY<2005)
L131         21 SEA ABB=ON  PLU=ON  L130 OR L53

     FILE 'HCAPLUS' ENTERED AT 10:25:02 ON 25 APR 2008
L132          7 SEA ABB=ON  PLU=ON  L129 AND (PY<2005 OR PRY<2005 OR
                AY<2005)
L133         28 SEA ABB=ON  PLU=ON  L132 OR L42
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     FILE 'HCAPLUS, WPIX, PASCAL, COMPENDEX, JAPIO' ENTERED AT 10:26:59 ON
     25 APR 2008
L134          76 DUP REM L133 L131 L120 L109 L94 (11 DUPLICATES REMOVED)
                    ANSWERS '1-28' FROM FILE HCAPLUS
                    ANSWERS '29-46' FROM FILE WPIX
                    ANSWERS '47-53' FROM FILE PASCAL
                    ANSWERS '54-60' FROM FILE COMPENDEX
                    ANSWERS '61-76' FROM FILE JAPIO
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